The Iron Age

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A Review of the Hardware, Iron and Metal Trades.

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New Metal-Working Machinery.

The Stiles & Parker Press Company, of Middletown, Conn., are now putting on the market a press of an entirely new design, especially adapted to sheet metal drawing, having been produced with reference to the wants of manufacturers of tinware, brass goods, clock cases, lamps and fittings, britannia ware, &c. It is a crank press, has a stopping and starting motion and the same general arrangements as several lines of presses made by them for similar work. In combining various improvements, however, an entirely new type has resulted. In all drawing presses hitherto made the blank-holder is forced down and holds the metal while it is being drawn by the direct action of cams. These are subjected to a great deal of wear and tear, owing to the heavy pressure required, which comes directly upon the faces. In a comparatively short time they become worn, and, unless there is a suitable compensating arrangement, do not operate with precision. Another great source of trouble is avoided in this new arrangement. In some of the old styles of presses, where the blank-holder is operated by cams on the main shaft, the cams force down the holder upon the metal to be drawn and tend to lift the main crank at the same time. Just at the end of the stroke, when the work is most severe, the action of the crank comes in and produces a still further lift of the shaft, accompanied by the springing of shaft and frame, frequently slacking up the hold on the cams sufficiently to allow the work to wrinkle. This is a fault for which press-makers have long been seeking a remedy. It is also very important to have the pressure regulated with great exactness. if too much is put upon the blank the punch will break through, and if not enough the blank will wrinkle, and bad, irregular work will result. The small margin there is for variation may be seen in the case of sheet metal, say No. 24, a very common thickness. It is only necessary for a wear of 0.0201 inch to take place to equal the whole thickness of the sheet to be drawn! The new press of which we present an engraving differs from those in general use in the novel method employed for operating the blank-holder and cutting punch. Instead of cams to operate the blank-holder a pair of toggle-joints are used, the arms of which may be seen in the engraving on each side of the blank-holder. This joint, when straightened, puts a perfectly uniform pressure upon the blank through the entire operation of drawing. Also by the adoption of a toggle-joint in the place of cams the strain of holding the blank is transferred directly to the frame without passing through the main shaft. The downward thrust of the crank in doing the work does not slacken the pressure upon the holder. The adjustment of the blank-holder and cutting punch is effected by the use of the well-known Stiles patent eccentric adjustment, which is both accurate and easy in its operation. The press is made triple-geared, with friction clutch, controlled and operated by the foot in connection with a friction-brake, which can be stopped, held and started from any point in the stroke at the will of the operator, or with the Stiles positive automatic stop motion, as desired. The weight of the press is about 9000 pounds; motion of blank-holder, 5 inches; motion of drawing punch, 10 inches; diameter of drawing punch, 10 inches; diameter of blank, up to 18 inches.

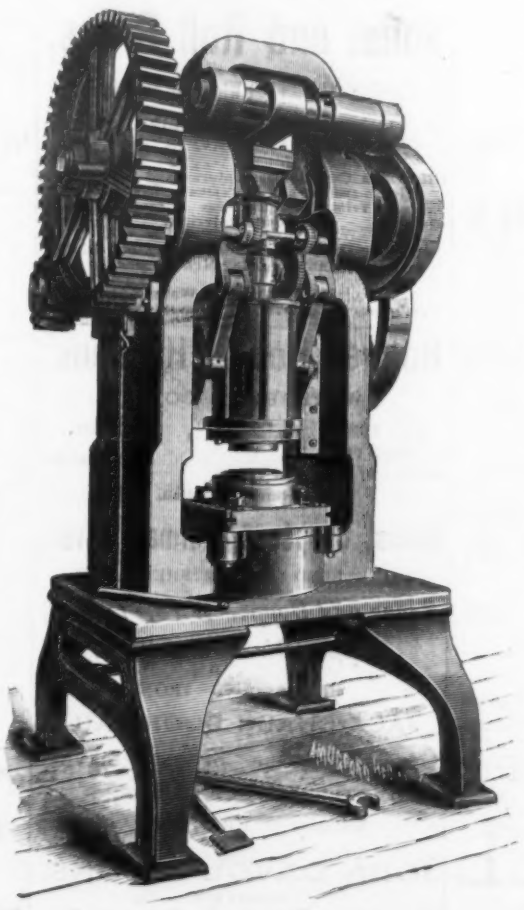

Fig. 1.—Toggle-Joint Sheet-Metal Drawing Press.

The Automatic Wire Forming and Cutting Machine, which we show in Fig. 2, has been specially designed for forming rings for rim wires, to be used in making kettles, pans, buckets, pails and other "pieced" tinware, as also for half circles suitable for bails, &c. This machine takes the wire from the coil, shown on the reel at the left of the machine proper, passing it first through the straightening rolls, which prepare the wire for forming by taking out the kinks. It then passes on to the feeding and forming rolls, which give it the shape required. As soon as this is done the cutting-off tool comes into action, dropping the finished ring or half ring into a basket on the floor. All these various operations are strictly automatic, so that the machine needs no attendance beyond starting the wire. It works at the rate of about from 50 to 80 rings per minute. The feed motion to determine the length of wire to be cut off can be easily varied by adjusting the crank-pin on the main gear at the left of the machine. This is done by means of the screw shown in connection with this gear. The crank operates a gear segment at the right, which acts on the feed motion through the ratchet and pawl shown back of the feed rolls. The circular plate shown at the right above the table, which has an automatic up and down motion, regulates the action of the cutting-off tool. Rings and half rings up to 9 inches in diameter can be made on this machine from wire up to $\frac{1}{4}$ inch diameter. It will also automatically straighten and cut off pieces of wire up to 30 inches in length. Although preferably worked by power, it can be operated by hand. The machine weighs about 1500 pounds.

The New York office of the Stiles & Parker Press Company is at 203 to 207 Center street.

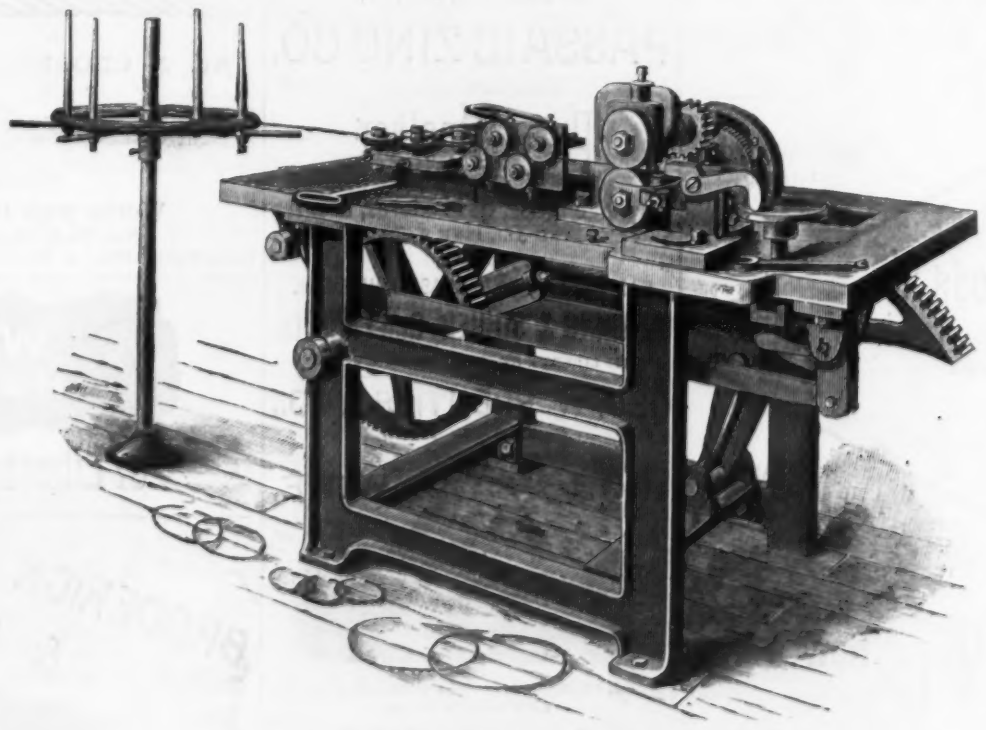

Fig. 2.—Automatic Wire Forming and Cutting Machine.

NEW METAL-WORKING MACHINERY, BUILT BY STILES & PARKER PRESS COMPANY, MIDDLETOWN, CONN.

A university is to be opened at Tomsk, in Siberia, during the summer. It will be the first of its kind in that part of Russia, and already possesses a library of 50,000 books and a valuable palæontological collection presented by Duke Nicolas, of Leuchtenberg.

The Great Eastern.

Referring to the proposed conversion of the Great Eastern into a coal hulk for Gibraltar, the London *Engineer*, in a recent issue, remarks:

To this end she will be fitted with special hydraulic machinery, and will be moored in the bay. No details of the machinery to be put on board her are as yet available for publication; and it must suffice to describe the proposed arrangements in very general terms. Her paddle engines and boilers and the telegraph cable tanks and passenger fittings being removed, suitable coaling ports will be cut in her sides, which will be provided with shoots of the most approved construction. Rails will be laid on her decks on which will run hopper wagons. These can be filled in the hold and raised by hydraulic lifts to any deck suitable in hight above water to the ships to be coaled. The wagons will then be run from the hatchway along the rails and emptied down the shoots. The system will closely resemble that employed at the coal staiths of Newcastle and the Tyne district. It is calculated that about 2000 tons can always be kept in readiness in the trucks on her decks, so that a large steamer can be coaled with great dispatch. The vast size of the ship will permit her to have several ships alongside at once, either to put coal into her by hydraulic whips, or to take it out of her as just described. The Government has insisted that she must retain her screw engines and boilers on board, so that should she break away from her moorings control can be exercised, and so she will be prevented from doing mischief.

It appears that the proposal to establish the ship in this way in Gibraltar has caused a species of panic among the local coal merchants and brokers, and the utmost opposition is being brought to bear against the scheme. The most absurd and ridiculous stories are being circulated by the Gibraltar press, and it is gravely argued that she will before long sink at her moorings, and do irreparable injury to the bay. She is said to be rotten; that her bottom is as thin as a sixpence, and so on. In point of fact, the hull of the ship is in excellent condition, and the chance of her foundering is altogether remote. She has an inner skin rising above the water level throughout her whole length, and the space between the two skins is divided into 800 water-tight compartments. Besides these she has cellular decks, and is well divided up by water-tight bulkheads. The ship was built of admirable iron. Portions of the plates have behaved like the toughest steel, and she was as well put together as possible. At a comparatively early period in her career she ran on Montauk Point, and tore nine holes in her outer skin—one no less than 85 feet long by 5 feet wide. She was got off, and proceeded to New York, delivered her cargo in perfect condition, and might have gone to sea again at once, but her owners had repairs carried out in New York—it is said at a cost of about a dollar per rivet—and these were of the most substantial nature. She has recently undergone an elaborate Board of Trade survey, extending over several weeks, and she has been pronounced perfectly sound and seaworthy. We may therefore dismiss the vaticinations of the Gibraltar coal merchants as undeserving of credence. So sound and good is the ship, indeed, that we cannot regard her conversion into a coal hulk without regret. The great ship deserves a nobler existence, and it might yet, we think, be found that she could be employed with profit as a sea-going ship. We can understand now why she did not succeed before; and it must not be forgotten that, with all her disadvantages, she did pay one company to which she belonged no less than 230 per cent. on her first cost to it in a very few years—not a bad return. Without going minutely into details, we may sketch generally the changes that would be made in her.

She has three primary defects. She draws too much water when loaded to enter any but a few principal harbors; she presents an enormous surface to the wind, and she is a most extravagant ship in the matter of fuel. By taking out her paddle engines and boilers—the engines alone weigh 850 tons—and taking off her upper deck and sides from stem to stern, she would be relieved of about 2000 tons of dead weight, perfectly useless to her as a cargo-boat carrying only a limited number of passengers, if any. This would considerably reduce her draft and also the area of side presented to the wind. The last is a far more important factor than appears at first sight. When loaded down now her side is over 30 feet out of the water, and presents an area to the wind of no less than 20,000 square feet. She would be perfectly safe with 10 feet of free board. Her screw engines might easily be remodeled. They are at present, and always must have been, very uneconomical. So far as we can ascertain, they never made more than 35 revolutions per minute in regular work, although they have been run for short periods up to and over 40 revolutions. With such spurts, however, we need not concern ourselves. The engines have four cylinders 80 inches in diameter by 4 feet stroke. At 35 revolutions and 1 pound effective pressure each cylinder will develop 42 horse-power, or the four cylinders 168 horse-power. With a vacuum of 26 inches, and a boiler pressure of 20 pounds, we may count on 30 pounds initial cylinder pressure, and allowing for some expansion we may assume an average effective pressure of 20 pounds per square inch, which is probably over the mark, and $20 \times 168 = 3360$ horse-power. This is, we believe, in excess of anything that the engines have really done in regular work. No doubt we have taken the average pressure as higher than the boilers could maintain. Taking 3000 horse-power as nearer the truth, this requires 60 furnaces, and these may be counted on to burn 3 tons per day each, or 180 tons in all, which means 5.6 pounds per horse-power per hour. This was not bad work for the year 1858, but 3000 horse-power can be had now for, at the most, 2 pounds per horse per hour—or, per day, say 65 tons—which could be readily burned in 18 furnaces of proper dimensions. These would fit into three double-ended boilers, which could be put in side by side, and fired either athwartship or fore and aft; one large funnel would suffice for the whole. The engines could be readily compounded. If it was decided that 3000 horse-power was sufficient, which would drive the ship at about 10 knots, then it would only be necessary to remove the present condensers and substitute for one pair of cylinders another pair, each half the diameter or a little more—say 45 inches. The surface condensers might then be placed in the wings, on the deck immediately above the engine, the pumps being, of course, driven by separate engines. The ship is of such enormous width that there would be ample space for this arrangement. The new boilers would carry 90 pounds, and so much of the old engines might be worked in that the cost of the alteration would not be great. The big ship would then have two powerful surface condensing compound engines, and she could easily carry 20,000 tons of grain, besides other merchandise, and a few passengers who might be content to give up speed for the sake of the extreme comfort which they could enjoy on board so large a ship. A ship carrying 20,000 tons of grain on a consumption of 65 tons of coal per day would be in a very favorable position indeed. An ordinary cargo steamer can carry 3000 tons at 9 knots, with about 750 I.H.P., and will burn, say, 15 tons per day, so that she carries 200 tons of grain per ton of coal per day. The Great Eastern would carry about 307 tons. If triple expansion engines were put into her, which might be done by leaving one pair of cylinders, say, for example, at the port side as they are, and putting in two new cylinders at the starboard side, the intermediate cylinder exhausting into the two port cylinders, the consumption of fuel might be cut down to under 50 tons a day, and the Great Eastern might be able to run and make a profit at rates of freight at which no other steamship afloat could live.

It would be worse than useless to enter far into details. We have said enough to show that the Great Eastern might, as we think, be made to pay well as a cargo boat. Whether she would pay as well so as she is expected to pay as a coal hulk we shall not pretend to determine, for we are not in a position to pronounce an opinion. The ship is now and to the end of her life must continue to be an object of interest to engineers.

Inventory Valuation of Machinery Plant.*

The keeping of cost and valuation accounts in connection with machinery has never been brought into so perfect a system as has ordinary commercial bookkeeping. The matter of inventory valuations with which it is proposed briefly to deal in this paper is, to say the least, in a very mixed-up condition, and although with some machinery owners it has received considerable attention the average method contains a good deal of guesswork. It is evident that at the very base of all account keeping is the finding out the true value of the property kept account of; and that without this being correct all else is useless. Probably the most popular and frequently used method of doing this is by pure guessing. Another system is that of taking original cost at first and then depreciating a given percentage each year, regardless of the several modifying conditions which will be mentioned later on. One large manufacturer used to work upon this system with his machine tools, depreciating their value 10 per cent. each year. Although acknowledging that it brought the figures rather too low, he said that it kept him upon the safe side, as not letting his assets appear of greater value than they really were. However safe this method may be, it is worthless if the object is to show the real value of the property. This will be apparent if reference is made to the second column of the following table, wherein $100 is shown decreased at the end of each year 10 per cent. from the remainder belonging to the year previous:

Years.	10 % off.	5 % off.	Years.	10 % off.	5 % off.
0	100.00	100.00	7	47.83	69.83
1	90.00	95.00	8	43.05	66.34
2	81.00	90.25	9	38.74	63.03
3	72.90	85.74	10	34.87	59.88
4	65.61	81.45	15	20.59	46.33
5	59.05	77.38	20	12.16	35.85
6	53.15	73.51			

It will be noticed that at the end of 10 years the amount is only about $35, at the end of 15 years $20.50, and at the end of 20 years about $12. In the third column is shown the respective amounts for $100 as depreciated 5 per cent. each year, instead of 10. This gives about $60, $46 and $36 respectively, as the amounts at the end of 10, 15 and 20 years, and it is much more reasonable for the valuation of machine tools than is the first-mentioned discount, if a system of this kind with a constant ratio is to be employed at all. The absurdity is, however, apparent of using a tool costing $100 when in such bad condition as to be worth but $12, or even $36. Such practice would be suicidal, and yet many tools need not be thrown away in 20 years. Another method is to estimate the probable price which an article would bring at auction. This is a very indefinite way, as it is well known that there are auctions *and* auctions. In some of these the property brings more than it is really worth, while in others, where the proper bidders do not happen to be present, or where an article is bought for a purpose for which it is unfit, the prices are sometimes almost *nil*.

A striking illustration of the variable values which may be attached to a lot of plant may be seen by comparing the average insurance value and the average taxation value, the latter being usually a very different thing from the former, and the difference being something that frequently sadly puzzles the conscience of the owner to adjust, as it is a soothing balm to his pocket-book. The system now used of taxing machine shop plant is very variable, and the average tax assessor is often at his wits' end to know what value to put upon such articles as patterns and special tools, even if he arrives at any fair conclusion regarding the standard machinery. The result is usually a compromise between the high guesses of the assessor and the low guesses of the owner.

It will not be necessary in this paper to dwell upon the best methods of finding the

* From a paper presented at the Chicago meeting of the American Society of Mechanical Engineers.

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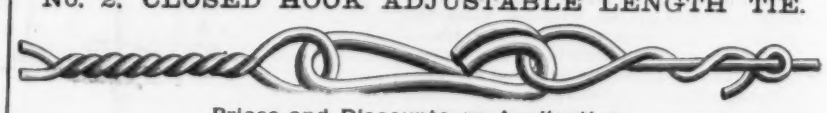

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cost of machinery or its productions, but taking it for granted that a machine shop's accountants have a complete record of the cost of all its plant, whether it shall have been purchased or made upon the premises, and supposing further that said plant is new and not deteriorated by wear, the question arises, What is its value? The first and most important thing to do is for everybody concerned to get it out of their heads that value is necessarily dependent upon cost. There are many modifying conditions which prevent this being true. First among these variable conditions is commercial fluctuation of value, and this applies perhaps more to purchased articles, such as standard machine tools bought in open market, than to patterns and other special tools, &c., made upon the premises, although the latter classes have, of course, certain fluctuations in cost dependent upon the labor market and the current price of materials. Thus, if an engine lathe should have been purchased a year ago for $1000, and, remaining unused, should now be accessed, its value, of course, would depend upon the present price charged by its maker. A second factor in variation of values is locality. For instance, if the lathe above spoken of was to be used in a mountainous region away from railroads, it would be fair to add to its value at that place the freight and other expenses (perhaps also custom duties) paid to get it there, providing an equally good and cheap lathe could not be bought nearer at hand, where the freight would be less in amount. An appraiser must, however, be careful not to follow the rule of adding freight and custom charges to the cost of a machine without proper discrimination as to whether it was necessary to bring the tool from a great distance or from a foreign country, instead of buying something nearer at hand. If the latter could have been done, the whole of such charges should, of course, not be added.

A third variable pertaining to values is obsoleteness, for it is evident that our hypothetical $1000 lathe, even if it has been bought at the lowest market price, which has not yet fallen, and near at hand, where no freight of any amount was to be added, and is new and in perfect condition, is not worth $1000 if a lathe can be bought for the same price which is of such superior design that twice as much work can be done with it in a given time. In this case the first-mentioned lathe is practically obsolete, and its value might be less than nothing. This supposable case is, of course, an extreme one, but the fact is that in these days of intense inventive activity machinery is constantly becoming more or less obsolete. In many cases this is so only to a slight degree, especially in cases of machine tools, such as lathes, planers, drill presses, &c. This fact is not much to the credit of mechanical engineers, but it is nevertheless a fact that far less original design has been put into this class of tools than into many others outside of machine shops. A fourth and the most obvious cause of depreciation in machinery plant is wear and tear, and there is perhaps more good judgment necessary in determining the exact amount of this depreciation than in any other part of the appraiser's work.

The grand principle which lies at the root of correct valuation, and which should govern the appraiser throughout all his work, is that any article is worth not what it did cost but what it would cost to replace it to-day, providing it is so useful that it would be desirable to so replace it were it destroyed. Thus, if a shop has a lot of machine tools which are built so near to the best modern practice that it would be desirable to duplicate them were they destroyed, they are worth exactly what said duplicates would now cost delivered and set up in the shop, less the depreciation due to the wear and tear. This rule also applies to boilers, engines, shafting, belting, shop fixtures and small tools—anything, in fact, which can be bought in open market (and, for that matter, it can be applied also to buildings and ground as well as plant). In the case of working drawings, patterns for castings, and other special tools, such as jigs, &c., all of which are usually made upon the premises, and whose chief cost consists in the items of labor and general expenses, together with a small amount for material, the method of obtaining the true value is, of course, somewhat more complicated. This is for the reason that the amount which such an article did cost is a very poor index of what it would cost to build a second one, it being usually the case that but one of a kind is needed, and no duplicate has been made. There must necessarily be some guesswork in getting the value of these articles, but it is usually from 10 to 30 per cent. less than the original cost spoken of—that is, if in full use. With this class of tools the variation of market price, locality and wear and tear do not occur to so great an extent as with machine tools proper, but the variation due to obsoleteness occurs in a very much greater degree than with almost any other class of property. It will be noticed above that working drawings and patterns are classed with jigs, as "special tools." They are not always regarded as such, but undoubtedly should be, as they have exactly the same general conditions governing their use. It may be here said that a marked distinction should always be made between an original drawing and a working drawing. One of the former class may cost $1000 to make, on account of the designing which is incorporated with it, but as a drawing it is not worth more than $10 if it can be duplicated by an ordinary journeyman draftsman for that amount. Whatever value the designing spoken of has in itself must be found in some other part of the inventory, under the head of "patent rights," "good-will," or something of that kind, rather than in the class "drawings." A working drawing, therefore, is (just as is a pattern or a jig) worth exactly what it would cost for a draftsman to copy it off, plus the paper on which it is drawn. A pattern is worth exactly what the wages and general expenses would be for a pattern-maker to duplicate it, plus cost of the wood, glue, varnish or other material. The true value of a jig or templet may obviously be found in the same manner, always assuming that said articles are needed for frequent use in the regular production of the goods

manufactured by the shop in question. It is evident that the value of all these classes of special tools depreciates enormously if said production is permanently decreased from regular and standard to occasional, or if the articles made are going out of fashion in the market, or are not able to compete in price with others of a similar nature. If they have become entirely unsaleable from the above causes, or from having been superseded by improved articles of some other kind, then the value of the drawings, patterns and other special tools with which they were produced is, of course, reduced to nothing. Great care should always be taken in appraising to rate such articles low enough, so as not to show deceptively high assets, but at the same time, in justice to all concerned in the ownership of the property, they should not be put at a foolishly low figure, as were the patterns of a large manufacturing concern known to the writer, whose policy was to gradually depreciate all their patterns until their value stood at "nothing" upon their books. This, of course, made them safe against showing false profits, and also had the merit of making their inventory worthless for this particular class of tools, so far as the legitimate functions of an inventory are concerned. The simplicity and ingenuity of this plan were more conspicuous than its common sense, especially after some time had elapsed and the figures had gotten down very low. Of course if the system was right at this time it must have been wrong at first, and to carry it out logically the patterns should all have been counted as worth nothing when they were first made.

In all jobbing machine shops, which do repairing and odd work rather than limiting themselves to standard manufacturing, there is a large accumulation of drawings and patterns—not usually, however, many jigs—which belong to what may be called "transient" jobs and which will probably never be used again, or, at any rate, only occasionally. These should be valued at a very low figure, usually less than 10 per cent. of what they cost, the amount of this percentage depending upon the probabilities of their future use. In estimating the depreciation due to wear and tear in engines, shafting, belting and machine tools due regard should be had to the general system upon which they are run—whether they are allowed to wear themselves almost entirely out and are then replaced by new ones, of which a new inventory is taken, or whether they are kept up to a certain standard of goodness by the replacing of worn parts, &c. The latter is the system practiced by the writer for many years past, and is, in his opinion, undoubtedly the best one. Leaving out the question of obsoleteness, there is no reason why a lathe or a planer should not be run for 20 or 30 years and kept up to the standard (by frequent repairs and replacement of parts) to which it has attained in the third or fourth year of its age. Shafting and pulleys can be regarded in the same way, but can probably be kept nearer to a new standard, as they do not wear out so fast. Belting also can be treated upon the same principle, but kept at a lower standard, the average condition of a lot of belting throughout a shop usually being probably nearly half-worn out. The writer intends for his own use to establish for these classes of machinery, and also for small tools, such as twist drills, reamers, &c., a standard percentage of "worn-outness"—if such a word may be coined for the occasion. He has not yet made an accurate estimate of the proper percentage to be employed in each case, but probably a fair allowance for the percentage of present new value in a well-equipped and properly taken care of machine shop, leaving out, as before intimated, the question of obsoleteness, would be for shafting, &c., 80 to 90 per cent.; engines and machine tools, 70 to 80 per cent.; boilers and belting, 60 to 70 per cent., and small tools, which are constantly being ground away, 50 to 60 per cent. This estimate is, of course, only approximate, and its correctness would vary with the standard of condition which was adopted and the consequent thoroughness and frequency of repairs.

A properly-kept inventory of the class of articles just mentioned would put them at new value the first year, and depreciate them from 5 to 10 per cent. annually, until the standard constant was reached, after which they would remain at about the same price each year, except as affected by violent fluctuations in the market, and by obsoleteness of design. With regard to the special tools before mentioned, the depreciation for wear and tear need be but very little, as if they serve their purpose at all they must be kept in such repair as to serve it perfectly; and they are not a marketable article in which a slight deterioration in appearance would largely affect their value, as would be the case with standard articles. In the case of working drawings, which are usually of trifling value, it is not worth while to take account of the wear and tear, as when worn too much for use they can be wholly replaced with duplicates, and the valuation can be kept, for convenience, at the same rate. An excellent mental aid to an appraiser, in considering the value of doubtful articles, is to estimate what he would be willing to bid at auction for a duplicate were the article destroyed. This amount, if correctly guessed at, is certainly a true index of the real value.

The writer has for several years past paid considerable attention to keeping a systematic inventory, in which all the property of the machine works with which he is connected is classified into "classes" and "subclasses," so entered in tabular form that the names need not be rewritten yearly except in case of additional articles entered. In this book there is a set of columns provided for each year for a term of years to come, so that the value merely need be entered, together with the amount of depreciation since the last year. There are proper columns provided for cost, variation therefrom to obtain actual new value, subsequent depreciation for the various causes that have been mentioned in this paper, &c. He will not, however, occupy the time of the society now to describe this book in detail, though it may possibly furnish a theme for some future occasion. The object of this paper will be attained if it shall haply influence even a few among many engineers to use more systematic methods in estimating the true value of the property in their charge.

As a recapitulation of the foregoing, the rules governing an appraiser may be tersely stated thus: Rate all property that it would be desirable to reproduce were it destroyed to day at the net cost of such reproduction in its existing locality, minus its estimated damage by wear and tear. Rate partially obsolete articles the same way, but minus also a percentage of their apparent value equal to their estimated percentage of obsoleteness or of improbability of usefulness. Rate wholly obsolete article at nothing.

The Fastest Steam Launch.

Henrietta is the name of a steam launch just built by the Herreshoff Mfg. Company, of Bristol, R. I., for Norman L. Munro, of this city. She is elegantly built, principally of mahogany, and a large amount of polished bronze makes her very attractive to the eye. The most astonishing quality, though, is her speed, which is probably greater than ever before attained in a vessel of her size. The Henrietta uses anthracite coal of ordinary marketable quality, and the natural draft is increased by a small steam jet in the uptake. We append dimensions of the boat and record of trial trip, which have been furnished by her builders:

The Henrietta is the 133d steamer of our build. Her dimensions are: Length on deck, 48 feet; length on water line, 46 feet 6 inches; beam, 7 feet 5 inches; depth, 3 feet 9 inches. She is open nearly two-thirds of her length, has air-tight compartments at each end and four water-tight bulkheads. The hull is built of wood, and the planking, decks, &c., are double thickness of mahogany. The keel and entire frame are of white oak, and all fastenings are of copper and bronze. Engine is of the triple-expansion type of our latest design, and intended for a very high steam pressure. The cylinders are 4 inches, 6½ inches and 10 inches diameter, and the stroke of piston is 8 inches. Boiler is the Herreshoff patent safety, and is of our usual improved type. It has about 9 square feet of grate surface, and the draft is accelerated by a steam jet in the uptake. The fire and engine rooms are not inclosed. Screw propeller is of bronze, with four blades, and is 28 inches in diameter. The boat is almost entirely free from vibrations, even at the highest speed.

The trial for acceptance was made June 14. Six runs were made over a base of 1 mile (5280 feet) in Bristol Harbor. There was a moderate wind abeam, and the sea was quite smooth. A moderately hard red ash anthracite coal was used that was about 15 per cent. of ash:

Run.	Mean steam.	Time.		Speed.	Mean of pairs.
	Pounds.	Min.	Sec.		
1	244	3	3	19.67	19.72
2	240	3	2	19 77	
3	244	2	59 3-5	20.05	19.98
4	242	3	4-5	19 91	
5	244½	2	59	20.11	20.165
6	250	2	58	20.22	

Mean speed, 19.955 miles = 17.3 knots.

Full time occupied, including turns, was between 24 and 25 minutes. There was no heating of bearings whatever, and it was the second time the boat had left the dock. The Henrietta left Bristol for New York at 4.48 a. m., June 16, in a dense fog, having two persons only on board, the engineer and pilot. She was detained fully one hour by the fog, and was overtaken by the Stiletto, also bound to New York, off Horton's Point, L. I., at 12.15 p. m., just as the fog cleared away. She ran side and side with the Stiletto to Sands Point, and arrived under the Brooklyn Bridge at 6.15 p. m., having had head tide nearly all the way. The actual running speed was over 13 miles per hour; and if allowance be made for fog and adverse tide, her speed was nearly 15 miles per hour. Consumption of coal from Bristol to New York, 900 pounds. Weight of the boat in running trim, 10,000 pounds. Immersed cross section, 7½ square feet nearly.

At Harsimus Cove, north of Jersey City station, are located the principal piers, warehouses, sheds and yards for bulk freight received at this port by the Pennsylvania Railroad. The general plan of this place embraces 100 acres, with a direct water front of 1610 feet, laid out in piers and docks. Here there are 14 miles of track in the yard. Pier 1 is 500 x 35 feet, and has two tracks down its center. Pier 2 is 1320 x 120 feet, and connects directly by tracks with the freight-yard. The dock between Piers 1 and 2 is 120 feet wide. Pier 3 is 1320 x 175 feet, and is double-tracked. The slip between Piers 2 and 3 is 180 feet wide. The live-stock pier and yards cover a space fronting on the Hudson of 3200 x 350 feet. On this pier is an immense abattoir. The dock between Pier 3 and the stock pier is 350 feet wide. On both Piers 2 and 3 are two-story freight sheds, covered with corrugated iron, each being supplied with hydraulic and steam lifts; No. 2 has a floor area of 70,000 square feet and No. 3 of 130,000 square feet. These sheds store freight for export and relieve vessels of cargoes to avoid detention of cars in case of late arrival of vessels. In the yard back of Piers 2 and 3 is situated the grain elevator for storage and transfer—storage capacity, 1,500,000 bushels. A belt without buckets or pockets, 2640 feet in length, carries 7000 to 10,000 bushels per hour from the elevator to vessels at the river front or to vessels within the docks, where several vessels may load at the same time.

We have received from Herr Schrödter advance sheets of a very interesting paper by G. Hilgenstock, of Hoerde, read at the general meeting of the Association of German Ironmasters on the 27th of June. It treats of the composition of basic Bessemer steel cinder, and gives the results of experiments showing that the phosphorus probably first is eliminated as tribasic phosphate of iron, which in the presence of lime is converted into $4CaO.P_2O_5$. This explains why so large a percentage of lime must be added. Practice has proven that this amounts to 18 per cent. of lime, more or less, in dephosphorizing pig carrying 3 per cent. of phosphorous and the minimum of silicon.

Paris, 1878. *For Superiority.*

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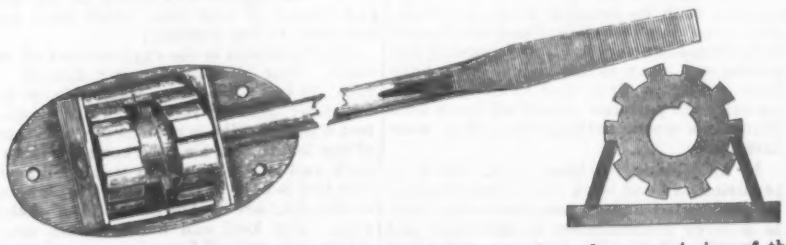

The above Cut shows the action or mechanism complete, also an end view of the Ratchet and Pawls, to which we wish particularly to call your attention, as in all ratchet movements, of whatever kind or nature, the RATCHET must be the principal and most important part employed.

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WEYMOUTH'S PATENT.

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The blade is best cast steel, spring temper, easily sharpened, and is giving *universal* satisfaction. A few moments' trial will show its merits and parties once using it are unwilling to do without it. Its sales are fast increasing for export as well as home trade, and it *seems destined* to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each of 60 pounds weight, suitable for shipping by land or water to any part of the world

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All manufacturers and dealers are hereby warned of our rights, and the public are cautioned against purchasing any Hay Knives which are not of our genuine manufacture.

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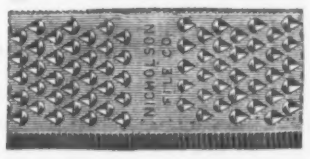

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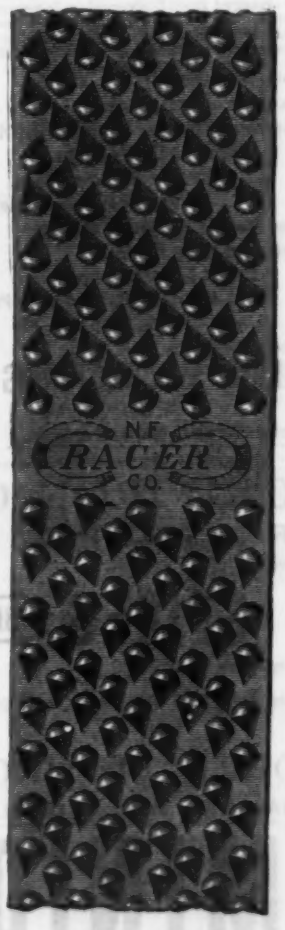

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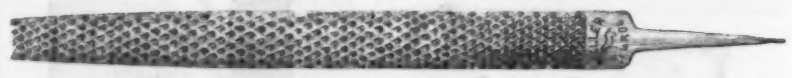

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English Letter.

(*From Our Regular Correspondent.*)

LONDON, July 5, 1886.

THE WEEK

has brought us well within the vortex of the political struggle, and another ought to see us well out of the worst of it. Up to the present the fortune of war has been adverse to the followers of Mr. Gladstone, and the cause of which he is the promoter seems almost certain to be lost at the polls. What is called the "Unionist" cause is triumphant so far—the actual result you will know before this letter is in type. Beside the elections we have summer upon us at last with a vengeance, cloudless skies and the temperature between 80° and 90° in the shade and 140° to 150° in the sun day after day. This glorious weather is in all respects welcome. It has come just in the nick of time for the farmers, and has enabled them to cut and get in their hay in the primest of prime quality. It is also good for the fruit of the market gardeners, and for the cereal crops. Wheat is looking very well indeed, and has come into ear in a most promising manner. In the same way the oats, barley, &c., are fast coming forward, while there is no sign whatever of disease among the potatoes. All these are good omens for our agriculturists, although your Western men may possibly be disposed to think that the reverse applies to them. With another month of fine weather our harvest will be fairly well assured, and will be of a fair average description—very good in the heavy land, but thin on the lighter soils. Its reflex action upon your markets must needs be considerable, notwithstanding the undoubted fact that Great Britain is not so good a customer for your products as she was a very few years ago. As it is, however, we consume vast quantities of your wheat and flour (both of which are carried much more cheaply from Minneapolis to London than from Minneapolis to New York), cheese, canned goods of all kinds, bacon, ham, and so on.

Leaving other matters and reverting to trade and commerce, I am sorry to have to report that there is virtually no improvement whatever. Just before the elections began there did appear to be a little spurt, but it has been killed by the all-devouring political excitement, and everything is literally as "dead as a doornail." One hears complaints on all sides of the utter unprofitableness of everything, the vast amount of work which has to be done for little or nothing, the difficulty of collecting money, and the continued fierceness of home and foreign competition. These complaints are not isolated, but are almost universal—the only exceptions being, I think, the American patent-medicine men, who seem to have annexed these islands, which they find a veritable gold mine. From every part of this country come reports of the severity of the depression, while we hear equally bad tidings from the industrial centers of France, Germany and Belgium. The whole world is evidently in a bad way and will need a good deal of physicking—the physic of failure and forcible stoppages—to restore its industrial equilibrium.

In the Welsh tin-plate trade there is still a good deal of discussion on the subject of the possibility of German competition. In the last number of the *Cambrian*, a paper which has a large circulation among the Welshmen of the southern half of the Principality, there is a long article by "Kosmos," the *nom de plume* of a well-known member of the trade. He discusses the theme very fairly, and by comparing the cost of steel bars and other materials arrives at the conclusion that the Germans may be kept out of the market by reducing selling prices by about 6d. ℔ box. In order to do this he suggests that the workmen should assent to an equivalent reduction in wages, that being the only remedy, apparently, which occurs to him. As a mere observer I am inclined to think that a much better plan would be for the Welsh tin-plate manufacturers to try to manage their own business, instead of allowing it to be knocked about by the London and Liverpool speculators. These latter gentlemen are so bold that they think nothing of selling 100,000 to 250,000 boxes for future deliveries at 3d. @ 6d. below whatever may happen to be the current price, and they have always so far been able to get out unscathed. When the makers know who are their customers in the States, and consult their actual wants, it will be much better for all concerned, and will do more to retain the trade in Wales than all the manipulations of wages, financial dexterity, &c., hitherto devised. At the same time, the Germans will be awkward competitors, seeing that some of them have been and are engaged in it as managers, &c., in South Wales.

THE IRON MARKET

has remained at the point at which it was left last week, and not a feature of interest can be recorded. Makers are consoling themselves with the belief that bottom prices have been reached, because buyers are more anxious for forward deliveries at current prices than they have been for some time past. Sellers, on the other hand, are more than ever disinclined for such contracts; hence the smallness of the parcels which are now changing hands. On the Glasgow warrant market there has been greater steadiness than generally characterizes that market, and the closing price was 39/ ℔ ton. Best brands are quoted at late rates by makers, but it is understood that lower quotations can be obtained from secured holders. Of shipments nothing new can be chronicled, as they remain pretty much at the average of the past month or two. At Middlesboro' the same monotonous level is maintained, with 29/4½, or a trifle less, ℔ ton for No. 3 G. M. B. As the quarterly meeting is to be held next Tuesday many transactions were held over till then, but with little hope of anything better. The West Coast market remains the same, with quotations for mixed numbers at about 42/. In Staffordshire the situation is precisely as last week, with a maintenance of late prices. The galvanized trade is reported flat, while in the wire and finished departments there is absolutely nothing new. Old double-headed rails, flange rails, boiler-tubes and cast iron remain unchanged, with a small inquiry and none too large a supply. Freights for pig iron by ordinary steamer from Glasgow to New York are steady at 5/ ℔ ton. Steel is for the most part quiet. The lull in steel sleepers has not been disturbed, nor are makers in other departments more than indifferently employed. Steel rails are a little stiffer this week, and inquiries in the aggregate are more numerous. The former doubtless arises from the fact that buyers, taking advantage of present low prices, have placed orders rather freely among many of the makers, who, being now fairly well booked, are standing out for a shade better prices; as, for example, it is believed that one or two of the Welsh firms have this week refused orders at £3. 10/, preferring to take only such contracts as are sufficient to keep their works going at prices several shillings above competitive rates. Among the orders placed within the last few days are from 3500 to 4000 tons for Sweden, which have gone to the North Eastern Steel Company, Limited, at a little above £3. 11/, and 3500 tons for the Great North of Scotland Railway, gone also to the same makers at a slight advance upon £3. 10/.

SCOTCH PIG IRON

is no stronger on the week, nor can it be expected to gain strength so long as 4000 or 5000 tons are weekly added to the colossal surplus stocks. Last week 4455 tons were added, bringing up the total in Connal's hands to 781,377 tons, as compared with 602,161 tons a year ago. There are 86 furnaces in blast in Scotland. The shipments are 35,592 tons behind to date, while the importations of Middlesboro' pig iron into Scotland are 25,296 tons behind. Current prices:

Deliverable alongside.	No. 1.	No. 3.
Gartsherrie, at Glasgow	43/	41/
Coltness, "	47/	43/
Langloan, "	43/	41/
Summerlee, "	45/6	41/
Calder, "	46/6	41/
Carnbroe, "	42/	39/6
Clyde, "	42/6	39/6
Monkland, "	39/6	36/
Quarter, "	39/6	35/6
Govan, at Broomielaw	39/6	36/
Shotts, at Leith	44/	43/
Carron, at Grangemouth	47/6	44/6
Kinneil, at Bo'ness	43/6	42/6
Glengarnock, at Ardrossan	42/6	39/6
Eglinton, "	39/3	36/3
Dalmellington, "	40/6	38/

MIDDLESBORO' PIG IRON

is very quiet, and in indifferent request at the following prices, f.o.b. at makers' wharves in the Tees, for G. M. B.:

No. 1 Foundry	32/3	Mottled	28/
" 2 "	31/3	White	27/6
" 3 "	30/6	Refined metal	46/
" 4 "	29/	Kentledge	33/6
" 4 Forge	28/6	Cinder	30/

WEST COAST HEMATITES

are fairly steady—if anything rather firmer—at the prices subjoined:

	No. 1.	No. 2.	No. 3.
Cleator	42/3	42/	41/9
Lonsdale	42/	41/9	41/6
West Cumberland	42/	41/9	41/6
Lowther	42/	41/9	41/6
Distington	42/	41/9	41/6
Solway	42/	41/9	41/6
Maryport	42/	41/9	41/6
Harrington	43/6	42/6	41/6

BLAST FURNACES.

The monthly blast-furnace returns of the *Ironmonger* give the following summarized particulars:

Total number of furnaces	
Existing July 3, 1886	871
In blast July 3, 1886	396
Out of blast July 3, 1886	475
In course of erection July 3, 1886	9
On ordinary pig iron of various districts	300
On hematite pigs (about)	84
On spiegeleisen	12
On basic	8

The number at work is gradually but slowly decreasing—the percentage to the whole number being now only about 45 % all told.

TIN PLATES.

In London there is perhaps hardly as strong a feeling in the market as at date of my last report. Still values have undergone no quotable alteration. Most of the works are reported well off for orders, and there are a satisfactory number of inquiries in the market. I quote IC cokes 13/9 f.o.b. Liverpool. At Liverpool the market has become steady and prices are firmer, there being also a better disposition shown by buyers to place orders. Considerable business has been done in coke tins and Bessemer steel cokes, and the general run of these were at 13/6 IC @ 13/9 IC. There are still some further inquiries in hand which are likely to result in business, unless, of course, prices are advanced again so very much beyond buyers' limits as to stop the business. There has been a little more doing also in Siemens' steel stampers with coke finish at 13/9 IC; also some coke tins. Ternes are pressed rather hard just now, all the new brands that are offering making the competition for orders very keen, and consequently there is a great deal of cutting going on when quoting. Prices of some brands are still as low as 12/6, advancing by degrees to 13/, 13/6 and 14/ IC. There are a few more inquiries for charcoal tins, but the specifications are not particularly good. Bessemer charcoals are on the whole more inquired after than Siemens charcoals and best charcoal tins. Bessemer charcoals are 14/6 @ 15/6; Siemens charcoal, 16/ @ 17/ IC, and best charcoals, 17/6 @ 18/ IC. Coke tins and Bessemer wasters are in better demand at from 12/3 to 12/9.

THE HARDWARE TRADES.

At Birmingham, although deliveries are in many cases suspended at factors' and merchants' warehouses pending the completion of the midsummer stocktaking, and travelers are mostly at home, a fair number of orders for the new quarter have already been given out. Scotland is a rather brisk market just now, and, although the country generally is disturbed by the elections, the fine weather appears to have counteracted for the moment adverse political influences, and better orders are arriving with a freedom which indicates a general resumption of buying. The shipping trade generally is quiet. South America trade appears to be looking up again, judging by the excellence of the orders from Venezuela, Chili and Buenos Ayres. The promised opening of the Spanish market to English goods is apparently delayed for a few orders. As we are now within a month of the opening of

NEW REVERSIBLE GUARD RAZOR,

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This Razor is used in the ordinary manner, with or without the guard. When used with the guard it is impossible to cut the face in shaving.

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For excellence in quality of Steel, Hardening and Tempering this line of goods is without equal.

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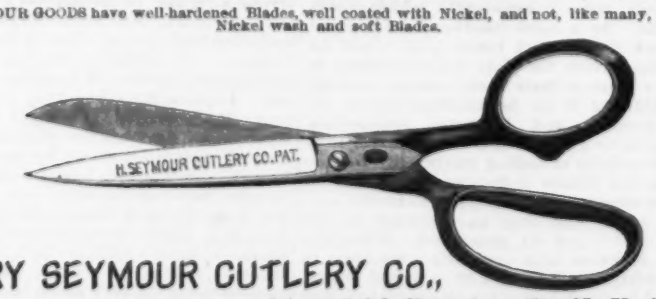

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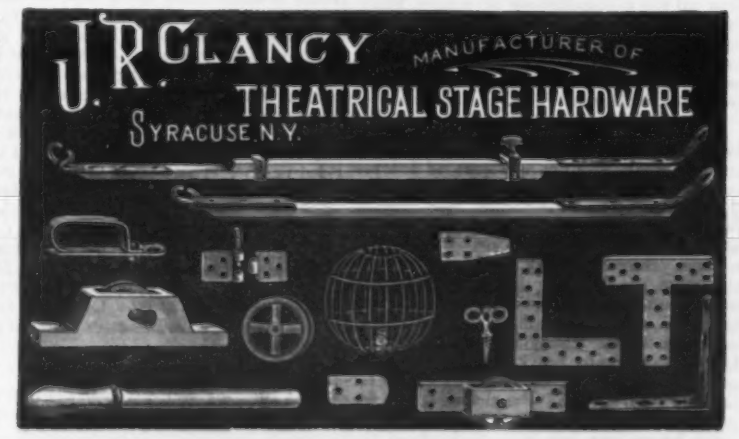

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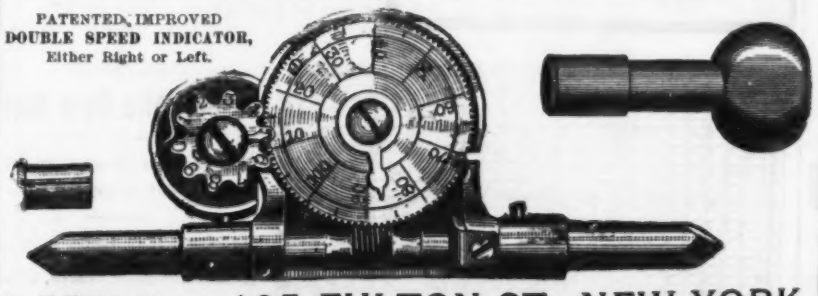

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The serrated jaws of the Wrench are interchangeable; that is, the same serrated plate may be used for either the stationary or sliding jaw, so that if one plate is broken another can be furnished adapted to either jaw without express designation. The slides, nuts and various parts are also interchangeable, thus easily repairing the Wrench at very small expense, and with as perfect practicability for further use as when the Wrench was new.

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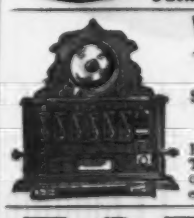

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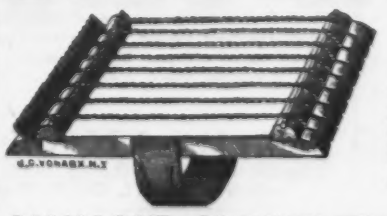

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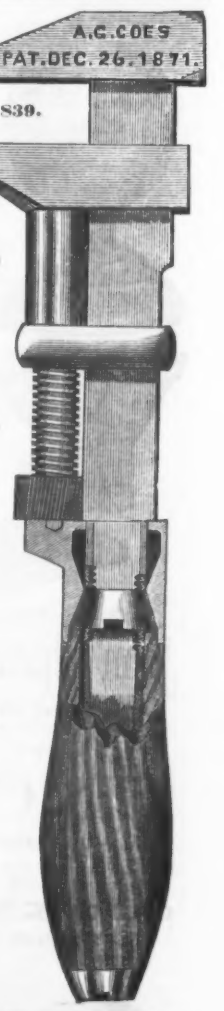

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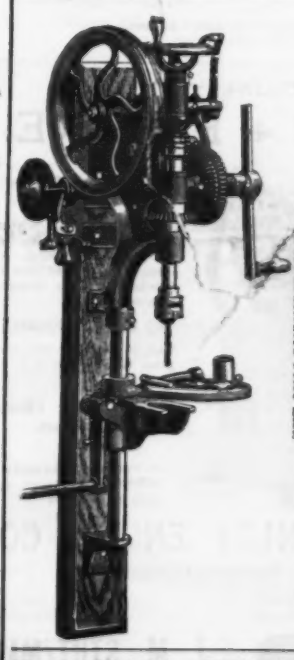

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the shooting season, and shipments for the American fall trade have begun, one would naturally expect to find great activity in the sporting-gun branch. Reports of business are very discouraging, both as regards home and export, and the Proof House returns bear out this testimony. For the United States and Continental markets, however, makers are fairly busy. The Australian market is in danger of being reduced to the American level by cheapening tactics of certain merchants or importers. To the United States the common quotation for cheap guns is now 30/, or, say, 25 per cent. less than it was three or four years ago. At Sheffield country orders hang fire under the paralyzing influence of the political campaign. Travelers are in many cases hardly clearing their expenses and in some instances I believe they have been recalled for a week or two. American indents for cutlery and steel are fairly maintained, but steel manufacturers who have just returned from the States have come back with a gloomy opinion as to the general outlook in their branch.

The Consolidation of the St. Joe and Desloge Lead Companies.

The St. Joe Lead Company and the Desloge Lead Company, both operating mines at Bonne Terre, St. François County, Mo., have been consolidated. Together they make between 10,000 and 12,000 tons of lead. The Bonne Terre *Register* gives the following details:

The basis of the transaction is the transfer, as before stated, of the entire property and franchise of the Desloge Lead Company, in lieu of which the former stockholders of the Desloge take stock in the St. Joe to the amount of the value of the property by them so transferred. Though the formal transfer has not yet been made, all the arrangements therefor are perfected, and as soon as the deeds can be drawn and executed the property will be formally placed in the hands of the St. Joe Lead Company, and will hereafter be operated under the sole management of the officers of that company. Mr. Desloge, who has hitherto had the management and who was the controlling spirit of the Desloge Company from its incipiency, now retires from all active participation in the business. The property thus acquired by the St. Joe Company is one of great value, and gives that company, in connection with their other mines, probably the most valuable lead property in the United States, if not in the world. To what extent, if any, the portion of the Desloge Works not destroyed by the recent fire will be repaired and utilized by the St. Joe company is not yet known.

About the year 1874 Firmin Desloge, then a young man, who had for several years been engaged in mining and smelting lead ores in Washington County, secured an option on what was then known as the Pratte land, adjoining the St. Joe lead mines, the great value of which was then just begining to be realized. Mr. Desloge at once began prospecting with the diamond drill, and after several months patient labor demonstrated the existence of lead ores on the property in large quantities. He at once closed the contract for the land and without delay organized a company to open and operate the mine. In 1875 a company was organized, the name and style of which, if we remember rightly, was the Missouri Lead Company. Subsequently the name was changed to the Desloge Lead Company, in honor of its founder.

In the same year a plant was established, consisting of dressing and smelting works, with a capacity of about 20,000 pounds per day of 24 hours. In 1879 a new mill was built on a greatly enlarged scale and on an improved plan, with the latest improvements in machinery. About this time the old air furnaces were abandoned and the roasting and blast furnaces substituted in their place. The lead-producing capacity of the works was now about 50,000 pounds per day, and they gave employment to several hundred men. Thus equipped the business of the company was energetically carried on up to the latter part of March, 1886, when a fire occured in the new mill by which in an hour's time the huge structure, covering an area of over 50,000 square feet, with all its costly machinery was laid in ruins.

The management of the Massachusetts Institute of Technology has rearranged and enlarged its course in civil engineering by the introduction of options permitting a wider range of choice in studies, and also by providing a more detailed and direct course of instruction in the special branches of the science. The object of the course is not only to make the student thoroughly familiar with the principles of engineering, but to illustrate their application in such detail that he may clearly see their relation to practical work in all departments of the science. It comprises surveying and topography, including fieldwork of all kinds, drawing, designing and construction. The general course includes instruction in regard to railroad building, from the first *reconnaissance* to the completed road, and a new and advanced course on railway management and transpotation is provided for the fourth year.

The truth concerning the sudden collapse of the recent strikes of coal miners and ironworkers in Belgium has leaked out. There is something amusing in the announcement made by the *Vooruit* this week to the colliers of the Borinage, and, through them, to the miners of the other districts, who broke the peace so disastrously some two months ago. It appears that this Socialist society, which claims to direct the actions of the whole working population of the Kingdom, has been occupied in hatching a plot for the destruction of "infamous capital," and, along with it, the "infamous" capitalist. One feature of the scheme was a general strike—not of coal miners only, but of all classes of workmen—at some future time, probably the late autumn of the present year, and at a moment when such an occurrence was unsuspected and therefore unprepared for. The colliers, ironworkers and quarrymen, by setting up a conflict with their employers on their own account, have marred this pretty plot, or, at least, diminished their chances of success. Hence the *Vooruit* is very wroth with the offenders, and it announces its intention of taking measures to punish the breach of discipline as it deserves. In the general strike, which, it seems, is yet to come, whether with or without the miners, the latter are to be left severely alone. That is, they will receive no "official" support from the Socialist organization.

Foreign Markets.

FRANCE.

PARIS, July 8, 1886.—*Metals.*—Our market has gradually become less active; Tin and Spelter have yielded slightly. We quote toward the close in francs the 100 kilos: *Copper.*—Chili Bars, 102 @ 103; Ingots and Slabs, 107.50; Best Selected, 110.50, and Pure Corocoro Ore, 103.25. *Tin.*—Bancs, 270; Billiton, 268.75; Straits, 263.25, and Australian and English, 265. *Lead*, 33 @ 33.75, and *Spelter*, 36.75 @ 37. *Iron.*—The situation has gone on improving in France, and better prices seem to rule everywhere. The Decazeville strike has terminated; out of 1500 men 1200 have returned to work. Fully 100 have been discharged outright; 200 will be employed again as work increases. In this city the upward tendency in the Iron market continues. Dealers have fixed the price of Merchant at 14 and Flooring at 13 francs the 100 kilos; soon the ruling will be higher. Common Sheets No. 2 are bringing 16 @ 16.50 francs. Old Rails are firm at 7. Advices from the Ardennes are quite encouraging; prices are rising under the impulse of an active demand. Many buyers still hesitate, but will soon be forced to enter the market. Great animation is reported from the Haute-Marne, there being a steady current of orders dropping in. They quote No. 1 Coke, 14; Mixed, 15; Special Iron, Prime, 20 @ 21, and Machine No. 20, 16 @ 16.50 francs. *Coal*—Is moderately active and steady.—*Moniteur des Intérêts Matériels.*

BELGIUM.

BRUSSELS, July 8, 1886.—*Iron.*—The Belgian Iron market has shown considerable strength during the week; orders received are not large, but they arrive in a steady stream. Rolling mills are busy, nor do they apprehend any sudden falling off in the demand for their products, this being about the best time of the year for them. The firmness of iron prices in Belgium under the present syndicate has the effect, as may be supposed, of playing some foreign orders into the hands of our German competitors, in Italy notably. Meanwhile prices remain unaltered; the syndicate have resolved to prolong their existence for another six months. Belgian Luxembourg Pig is tolerably well sustained at 4 francs ₱ 100 kg. Foundry, and 3.80 francs Forge. At Charleroi Foundry is selling at 5.75, and Forge at 3.70 @ 4.25. Merchant is worth 10 francs No. 1; Beams are scare at 10 francs; Angles may be quoted at 11.50; Sheets, No. 2, 12.50; No. 3, 14.50; Commercial, 16.50; Thin, 18.50, and No. 4, 20.50 francs. Negotiations about a general reduction of output have led to no result yet. Meanwhile makers are content to go on producing and selling at rates which if they do not leave great profits, at least enable them to bridge over the summer season with a moderate margin on an average. *Coal* has not been affected in either direction by the strikes; prices are steady.—*Moniteur Industriel.*

GERMANY.

HAMBURG, July 8, 1886.—*Iron.*—There has been no improvement during the week in Rhenish Westphalia, nor is there any indication that there soon will be. Pig-iron production, it is true, has been reduced, but not sufficiently so. It is hoped that the Government will reduce the freight on Iron Ore in the Siegen district. After pending contracts for Pig Iron are filled the dullness may become still greater. There has been a better demand for Forge Pig at Siegen, showing that rolling-mill owners do not expect it to decline any further. Meanwhile, production thereof is likely to be curtailed still further after stock is taken and the balance sheets exhibit the losses made. Luxembourg has been weaker than ever and declined to below 36 francs. Makers of Finished Iron are losing money all along. Some few mills are still doing well in turning out Boiler and Coarse Sheets; Thin Sheets are also slightly looking up. The filling of old orders for Wire Rods keeps some works busy, but prospects are not cheerful, the export demand slackening still further. Foundries and machine shops have to content themselves with unremunerative prices; only a few are busy to the extent of their capacity. *Metals.*—Lead is held higher, but at the advance asked little transpired; Copper has been quiet; Spelter steady, with a fair demand. We quote German Lead 14 marks; Lake Copper, 52 @ 55; Spelter, 14.50 @ 15, and Tin, 104 @ 105.—*Borsenhalle.*

HOLLAND.

ROTTERDAM, July 5, 1886.—*Tin.*—Banca had receded to 59.50, but speedily recovered to 62.50, spot, and 61.75, July-September delivery, while Billiton has been selling at 61.25 @ 61.50 for August-September. The following statement shows the position of Banca Tin in Holland on the 30th of June from the official returns published by the Dutch Trading Company:

	1886.	1885.	1884.
Import in June.... Slabs	13,756	3,416	5,958
Total six months.....	74,429	84,140	50,330
Deliveries in June.....	11,500	13,131	8,600
Total six months.....	70,514	56,441	60,707
Stock second hand.....	30,182	47,875	39,569
Unsold stock.....	81,339	106,698	80,062
Total stock.....	101,521	154,573	109,631
Afloat..... Piculs	7,200	2,450	10,720

Statement of Billiton.

Import in June..... Slabs	6,500	8,400	3,100
Total six months.....	41,400	48,794	38,358
Deliveries in June.....	6,974	15,808	6,814
Total six months.....	40,442	52,368	52,832
Stock	16,770	33,626	42,029
Afloat..... Piculs	17,000*	30,500	21,000

Quotation, June 30.

Banca	62 fl	53¾ fl	52 fl
Billiton	61¼ fl	53⅛ fl	50 fl

* Including to-day's sale.
—*Koch & Vlierboom.*

SPAIN.

BILBAO, July 1, 1886.—*Iron.*—Iron Ore has been moderately active at 6/5 @ 6/6 for Campanil and 6/ @ 6/4 Rubio Superior. Shipments have been made during the week in good condition. Freight to Cardiff-Newport has been steady at 4/10. Shipments so far sum up 1,633,963 tons, against 1,618,436 last year.—*Revista Minera.*

AUSTRIA.

VIENNA, July 4, 1886.—*Iron.*—There has been a lively demand for Structural Iron and Agricultural Implements; there having been hardly any spring trade business is all the more active now. Although the price of Pig Iron is lower, Finished Iron remains steady. Austrian locomotives are at present 45 ℅ cheaper than they were in 1882. We quote at the close: Pig, 43 @ 48; Merchant, 95 @ 122.50; Sheets, 140 @ 175, and Beams 100 @ 105 florins ₱ ton.—*Austrian Trade Journal.*

RUSSIA.

ST. PETERSBURG, July 6, 1886.—*Iron.*—Iron manufacture in the Ural district is in a poor plight, and makers insist that the duties should be raised at least 25 ℅ if possible before the Nizhnee-Novgorod fair. There is some prospect that the Government may comply with their wishes at once, and that later on there may also be an increase of the duty permanently.—*Journal de St. Petersbourg.*

EAST INDIES.

SINGAPORE, June 2, 1886.—*Tin.*—Settlements aggregate 250 tons at up to $34.75, and the market closes strong in spite of increasing supplies. Shipments last month were 350 tons to the United States, and 960 to the United Kingdom. *Tonnage.*—For New York the August has cleared, the E. Accame will follow in a few days, and the Evie J. Ray has taken the berth. For Boston, the Hoogly is leading. *Exchange* is weak at 3/4⅛ for six months' sight credit drafts. The Nestor took for New York from Penang 2524 piculs; the Antenor from here, 841; the Pekin, 421 for New York and 440 for Boston.—*Gillfillan, Wood & Co.*

Heavy Modern Machine Tools.

From a paper embracing the subjects of modern machine tools and workshop appliances for the treatment of heavy forgings and castings, recently read before the British Institution of Civil Engineers, by Mr. W. W. Hulse, we take the following particulars:

It was stated that the greatly extended employment of steel, and the increase in the weight and magnitude of forgings and castings both of steel and of iron characteristic of late years of various branches of engineering, had led to important changes in machine tools, in order to prevent a decrease in the quantity of work turned out. For not only was steel specially obdurate to the action of cutting, but it was usual in steel forgings to leave an excessive thickness of metal to be cut away for the sake of economy in the forging, and of the enhanced value of coarse steel cuttings in remelting as compared with fine ones.

Mr. Hulse selected the following for illustration and description: A 40-inch lathe, a 34-inch lathe, a large universal planing machine, a horizontal boring machine and lathe, a vertical and horizontal planing machine, a horizontal drilling, tapping and boring machine, a vertical milling and drilling machine, a ribbon sawing machine, a 30-ton power traveling crane, and spirit levels.

The 40-inch lathe, with four cutting tools, was 75 feet long and weighed about 100 tons, and would take in objects between the centers and over its sliding carriages up to 60 feet in length and 5 feet in diameter. It had distinct single, double and treble gear-wheel powers, each having five different changes of strap-power in the cone pulley and two in the top driving apparatus, making in all 30 various powers or speeds available. The main spindle was of steel, 13 inches in diameter by 21 inches long, and the outer journal was formed with grooves, like a propeller shaft, to take the end thrust. The face-plate had both external and internal gearing, and was fitted with four steel jaws operated by independent screws for gripping the work. Two sliding carriages were provided, each carrying a pair of duplex compound slide-rests and two cutting tools, or four in all. Each tool took a "cut" 1½ inches deep and over ¼ inch thick at the rate of 6 to 7 lineal feet per minute. The sliding carriages were operated by twin fixed guide-screws, placed one at the back and the other at the front of the bed on the outside, and of rotating nuts which worked upon the screws. The guide-screws were made in two lengths joined together to insure their alignment one with the other; but as each length was held fast at the outer end the joint was not subject to torsional stress. The complete independence with which each sliding carriage could be traversed in either direction was an important advantage resulting from the employment of stationary instead of rotating guide-screws.

The 34-inch lathe, with eight cutting tools, had fixed guide-screws inside the bed between its two outer girders, and each sliding carriage was connected with only one of them. The spindle was of similar construction, but of greater strength than in the 40-inch lathe. The bed was in two lengths bolted together. The two front girders supported and guided the front sliding carriages and tools, and the two back girders those at the back at the lathe. Each sliding carriage carried one compound slide-rest fitted with two top slides holding one cutting tool each. The cutting tools might be actuated conjointly or independently. The length of the lathe was 45 feet 6 inches and the weight about 80 tons, and it was specially designed for turning steel ingots or heavy steel forgings in the rough.

An illustration was given of the large planing machine, capable of planing 30 feet long, 11 feet wide and 10 feet high. The bed was 40 feet long, made in two lengths. The table was 33 feet long, cast in one piece, strongly ribbed underneath. The machine was arranged for planing objects lengthwise or crosswise, or vertically, as in slotting. The possession of these several functions rendered the machine capable of treating, at a single setting, heavy objects which otherwise might require several removals to and resettings on other machines. The table was reciprocated by means of a large steel screw and traveling nut, the screw being driven at one end of the machine. The screw, being of great length and weight, was supported between the end bearings by adjustable cylindrical rollers placed at each side at intervals of about 10 feet apart. The rollers dipped in oil and carried up oil to the screw. The traveling nut was partly cut away, so as to allow it to pass by the supporting rollers without colliding. The V slide surfaces of the table and bed were inclined to an angle of only 15°, and for lubricating them a series of other cylindrical rollers, dipping in oil and mounted upon axles parallel with the inclined surfaces of the V-slides, were introduced. The mechanism for producing the cutting feed when planing longitudinally was actuated by adjustable stops secured to the table, which, as the table traversed to and fro, alternately propelled a rack backward and forward through a greater or less distance, according to the positions in which they were secured to the table, the arrangement being such that the feed-screws remained stationary during the cutting traverse, and were rotated only during the backward or non-cutting traverse. The extent of the feed was regulated by the distance the rack was traversed, and by the number of turns it caused the spur-wheel to make. By this means the cut might be varied by gradations of $\frac{1}{8}$ inch up to 2 inches broad. It was applied only during the backward traverse of the table.

The horizontal boring machine and lathe was designed mainly for boring and facing medium-sized engine cylinders. Fast and movable headstocks were provided, as in a lathe. The main spindle was of steel, with its outer bearing formed with grooves, as in a propeller shaft, to take the end thrust. Between the two standards and bolted to them both was a horizontal sideboard which carried the sliding carriage. The two standards had vertical tee-grooves on their inner faces for receiving the bolts which secured the horizontal bed to them. The boring bars, with cutters, were held between the centers of the headstocks and rotated by the face-plate and driver, the object to be bored being fixed to the tee-grooved table. The machine was capable of boring engine cylinders up to 30 inches in diameter, and turning and surfacing work up to 48 inches in diameter.

The combined vertical and horizontal planing machine weighed about 90 tons, and was capable of operating over a vertical plane 20 feet long by 15 feet high, and over a horizontal one 20 feet long by 3 feet wide. The cutting tool was fixed to a compound slide which was traversed vertically by a guide-screw. The vertical slide-bed was secured to two carriages which traversed upon two horizontal slide-beds. The traverse along these beds was produced by means of two guide-screws rotated simultaneously from the driving apparatus, which, through a horizontal shaft and bevel gearing, also operated alternatively the vertical guide-screw. There were three distinct automatic cutting-feed actions—one for planing vertically lengthwise, another for planing horizontally lengthwise, and the third for planing vertically crosswise. The whole of the mechanism was operated from one driving apparatus conveniently placed at one side of the machine. For some descriptions of work it was useful to fix on the bed a tee-grooved table about 8 feet square, having compound rectilinear and circular slides, as in a slotting-machine table, to enable circular and curved as well as flat work to be planed.

The universal horizontal drilling, tapping and boring machine would operate over an area 16 feet long by 10 feet high. There were two standards which could be traversed horizontally to and fro along a slide-bed; each was provided with a spindle mounted on a carriage, movable up and down the standard automatically. For drilling and boring the spindle was provided with variable automatic feed and quick hand actions, and when tapping work the automatic mechanism was put out of gear, the spindle being left free to slide inward and outward under the influence of the tap. The spindle carriages were furnished with platforms on which the attendants stood and were carried about, having always within convenient reach the hand-wheels and levers for putting in action or suspending each function of the machine.

In the combined vertical milling and drilling machine the main frame was of strong box form; the spindle projected 24 inches, and had a vertical movement of 18 inches. The spindle worked in two conical bearings within a hollow square slide, movable vertically through square guides formed in the body of the machine. The lower bearing was close to the head of the spindle, and a locking screw was provided for holding the square slide firmly in position at any desired point of the vertical adjustment. A seperate self-acting continuous feeding mechanism was provided for drilling or boring, to be brought into play when required. The table on which the work was secured consisted of a tee-grooved top and two pairs of horizontal transverse slides, with a worm-wheel between them.

In the ribbon sawing machine for sawing off ingot heads and for sawing metals in the cold state the ribbon saw overhung the frame nearly 8 feet, was 2½ inches wide, and was carried by two pulleys, each 8 feet in diameter, with the centers about 9 feet apart. The upper pulley was secured upon a revolving spindle carried by a sliding-block, which was free to move vertically, in guides formed in the standard of the machine. The block was actuated by screw and nut, and was connected with a balance weight and lever which held the ribbon-saw in tension. The lower or driving pulley had a large spur-wheel on one side of it, and was rotated by a cone pulley and double gearing. For carrying the work there were two sliding tables parallel to each other on the same horizontal plane. The greatest depth of work through which the machine was adapted to saw was 15 inches; the pitch of the teeth varied from ⅛ inch to ¼ inch.

One of the distinguishing features of the 30-ton traveler crane was that the crab was a fixture upon the traveler, instead of being movable along it. This enabled the crane to operate over a wider area of workshop floor than was possible with the movable crab usually employed. Another feature was the arrangement of the chain for lifting and lowering, which was all in one length, but led in two symmetrical lines, so that the load always hung centrally between the two transverse girders, and strained each line of chain and each transverse girder equally with the other. A quick-running rope was employed for driving the crane, and all the various movements were transmitted through a horizontal shaft in the crab. This shaft was provided with three sets of friction-clutch bevel-wheels; through one set the barrel was actuated for lifting and lowering; through another the bogy carriage was traversed transversely, and through the third the traveler was traversed longitudinally. The three clutches were operated through three hand-levers, situated close together, worked by an attendant standing upon the platform. These cranes were in some cases arranged to be driven by a long shaft, or else by a steam engine carried upon the crab, either of these systems being preferable to the quick-running rope for steel and iron foundries. For steel melting houses, foundries, &c., this type of crane was well adapted, because the attendant was not exposed to the fumes and heat rising direct from the molten metal as he stood at at the side of the building opposite to the furnaces.

In its last issue the London *Economist* says: "Of the trade outlook there is little that is new to say. The prospect has certainly been brightened by the improvement of business in the United States, an improvement which not only benefits us directly by increasing the demand for our products, but which is welcome as pointing to a coming revival here, because experience has taught us that a trade reaction in the States, whether favorable or adverse, is generally the precursor of a similar movement on this side the Atlantic."

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The office of this journal is removed to 66 and 68 Duane Street.

British Trade for Six Months.

The returns of the British Board of Trade for the first six months of the current year are instructive. The exports of pig iron were 479,007 gross tons for the first half of 1886, against 450,739 in 1885 and 648,463 in 1884. Had it not been for the increase from 55,628 tons in 1885 to 154,654 tons in 1886, or nearly 100,000 tons in the shipments to this country the exports of Great Britain would have dwindled to an insignificant figure. It must be remembered, too, that a very heavy proportion of these exports are spiegeleisen and ferromanganese. In bar, angle, bolt and rod iron we take only a very insignificant percentage of the total. For the first six months of the three years 1884, 1885 and 1886 the exports to this country were 2688, 1080 and 1943 tons respectively, out of 139,261, 123,195 and 114,474 tons respectively. In railroad iron of all kinds the steel makers of Great Britain have occasion to deplore a further falling off, the exports having declined from 383,850 tons in 1884 to 363,125 tons in 1885, and 345,826 tons in 1886. Of this quantity the United States are credited as buyers with 10,983 tons in the first six months of 1884, 5044 tons in 1885 and 13,768 tons in 1886. So far as the 1884 and 1885 figures are concerned a heavy proportion of this total came here only in transit to Canada. The English trade in hoops, sheets, boiler and armor plates, too, shows a decline from 168,703 tons in 1884 to 154,387 tons in 1885 and 146,266 tons in 1886. Of this we took 7300, 8523 and 7502 tons respectively, by far the larger proportion, of course, being hoops for baling our cotton crop. Tin plates are the only article showing an uninterrupted improvement in the volume of business. Out of 144,751 tons shipped in the first six months of 1884 we took 106,108 tons. In 1885 this rose to 115,861 tons out of 153,257 tons, and in 1886 to 148,388 tons out of 181,994 tons. Of unwrought steel we have become the heaviest buyers, taking 23,074 tons out of 49,787 tons in 1886, against 5912 out of 26,233 tons in 1885, and 7022 tons out of 28,143 tons in 1884. These figures we believe group together the bars sent from the Sheffield district and the open-hearth blooms and billets, which came chiefly from Scotland. The increase has undoubtedly taken place only in the latter. Great Britain sends out large quantities of goods classified as "cast and wrought iron and other manufactures unenumerated." The totals for the first half of the three years 1886, 1885 and 1884 bring 173,699 tons, 169,904 tons and 193,091 tons. The share of the United States is insignificant, being only 889 tons, 742 tons and 1669 tons. Of old iron the exports for the first half of 1884 were 32,790 tons, of which the United States took 15,776 tons. In 1885 the figures were 32,332 tons and 4399 tons respectively, and in 1885 71,817 and 27,817 tons respectively. The June exports of old iron from Great Britain were only 2505 tons to the United States, and not less than 16,325 tons to other countries, thus showing that buying had set in from other quarters after we had stopped purchasing.

The magnitude of the hardware and cutlery trade of Great Britain is shown well by the following figures, which cover the exports for the first six months of 1885 and 1886 to the countries named:

Russia	£18,849	£18,979
Germany	80,781	71,625
Holland	36,163	34,778
France	67,897	71,446
Spain and Canaries	41,034	41,367
United States	129,370	156,735
Foreign West Indies	15,658	26,137
Brazil	65,411	73,271
Argentine Republic	53,188	52,785
British North America	56,018	63,393
British Possessions in S. Africa	28,901	21,494
British East Indies	127,060	137,413
Australasia	296,278	307,854
Other countries	366,193	324,578
Total	£1,382,801	£1,402,285

Roughly, therefore, the United States takes 10 per cent. of the goods shipped from Great Britain to foreign countries.

The Crop Prospects.

During the next few weeks the principal subject of interest to the entire community will be the condition of the crops. It is, of course, too early yet to gauge even approximately the volume of our agricultural products. Concerning the greatest crop of the country, hay, the reports are very encouraging generally except in the Northwest. Of corn we know only that, according to the July report of the Department of Agriculture, there has been a greater acreage, 75,689,000 acres being planted in corn this year, as against 75,130,000 acres last year, an increase of 3.5 per cent. Of its condition at the beginning of the month we are informed that it was 95 per cent. of an entirely good condition, as compared with 94 per cent. in 1885 and 96 in 1884. The great corn belt of the West is reported to be in medium to high condition, being best in Kansas. The largest increases in acreage are in Kansas, 20 per cent.; Dakota, 30 per cent., and Nebraska, 10 per cent. On the Atlantic Coast this crop is backward. It will be some time before anything definite is known concerning the outlook for this crop, which may still be a disappointment, but much needed rain has fallen since the report, and if the present conditions continue we may harvest the best crop of corn the country has ever raised.

Estimates of the wheat crop range from 390,000,000 to 425,000,000, the Chicago *Tribune* placing it at 400,000,000 bushels. The lower figure, that of the Prime Bureau, was based on estimates which did not take into account the large increase in California, which is placed at 70,000,000 bushels, or between 10,000,000 and 20,000,000 more than usual. A great deal has been written lately on the damaging effect of the drought in the Northwest, which, however, affects only the spring wheat. The great winter wheat crop is safely harvested throughout the larger part of the area devoted to it, and 300,000,000 bushels is believed to be a conservative figure, against 210,000,000 bushels last year. It will be seen, therefore, that even a severe falling off in the yield from the increased damage of spring wheat cannot wipe away more than a part of this gain. Harvesting in the spring wheat crop has now begun.

According to the last report of the Department of Agriculture the increase in the area of cotton planted, viz., 1¾ per cent. was more than counterbalanced by a decline in the average condition, being 86 on July 1, against 96 per cent. at the same time a year since. It is in the best condition west of the Mississippi. It will be seen from this brief summary of the situation that, so far as it is defined, the outlook is promising. It certainly does not justify the alarmist views which are put forward with so much persistency. We are passing through a critical time in some respects, and the developments of the next few weeks may justify some discouragement. But so far the prospects are fairly bright.

The iron trade has learned to study with great interest the reports of the earnings of the railroads, on the ground that they foreshadow whether or not manufacturers can expect plenty of orders from their best customers. It has been an encouraging feature that reports of earnings have become far more numerous during the past years, and that some companies who were prominent in withholding them have yielded to the pressure of public opinion and are keeping the financial world informed concerning the monthly fluctuations in their affairs. Unfortunately the growing demand for data of this kind appears to foster the desire of speculative directors to use them as a means to hoodwink the public. The old device of charging full rates on construction material for extensions and feeders has long since been discovered, and business men look with suspicion upon the returns from roads known to be active in building unless it is distinctly stated that sums transferred from one pocket to the other are not used to swell the totals. Recently the exigencies of the stock market have created another system of distorting the truth, and some of the granger roads are credited with having adopted it. Leading financial writers openly charge that some of these lately warring railroads have reported as their earnings the aggregate of their bills for freights, deliberately suppressing the fact that very large rebates are paid to shippers. They attempt to deceive the public into the belief that their earnings were not affected sensibly by the war, when in reality their actual receipts for services rendered have suffered a tremendous decline during the period preceding the truce now entered into. We call attention to this matter merely because it indicates that business men should not place too much faith in the official figures emanating from some quarters. A study of the railroad situation as revealed by monthly reports of earnings is valuable in its way, but it is evident that some discounts must be applied.

Our Trade with the Cape.

A prolonged drought, the decline in value of wool and diamonds, as well as less profit derived from ostrich farming, caused for the greater part of last year an unusual depression at the Cape of Good Hope. Fortunately a favorable change has set in for the past three months. Wool has recovered 25 per cent. in the world's markets, and diamonds are rising in spite of increased production at the mines. While the crisis lasted our domestic export declined last year to $1,391,016, as against $1,610,257 in the calendar year 1884, and we imported only $1,464,410 worth of Cape products, against $1,915,554 in 1884. Our chief import from the Cape is carpet wool in the grease, while we ship thither flour and the usual assortment of American goods. The Cape Colony, in spite of its frequent spells of drought, is a valuable possession of Great Britain on account of the great variety of its resources, its proximity to the southern part of South America, while holding a commanding position in South Africa not far from Aden and the Red Sea. The Cape and adjacent colony of Mauritius are situated handy even for trade with Bombay and Australia, thus constituting an important link in the chain of British colonial possessions. Add to this a healthy, moderate climate and the possibilities of attracting a farming population of *bona fide* settlers on a large scale eventually, and it must be confessed that few outlying points of civilization can boast of as many advantages.

It will be precisely 400 years on September 14 next when Bartolomeo Diaz, the Portuguese discoverer, landed in Algoa Bay, and 11 years later Vasco de Gama doubled the Cape. British ships visited it in 1591, and about 1602 the Dutch made it a place of call. In 1620 two English East India commanders took possession of the Cape in the name of Great Britain, but no settlement was formed. The Dutch East India Company took possession of Table Bay in 1652, and the Netherlands held the colony till 1806, when it was captured during the Napoleonic wars by a British force and ceded to the British crown in perpetuity by the general peace settlement of 1814. There have since been differences with the Boers, or original settlers from Holland, and several Kaffir wars, but these troubles have not prevented the colony from extending its territory, so that it now forms a compact whole, if we except the Orange River Free State in the north, and Kaffraria in the southeast.

The most important event in the history of the colony was the discovery of diamonds beyond the Orange River, which has undoubtedly been one of the main causes of its increase in prosperity in recent years. The measure of that prosperity may be judged from the fact that, while the shipping inward in 1870 amounted to 335,509 tons, in 1884 it amounted to 2,651,006 tons, and in the same period the imports, excluding specie, rose from £2,352,043 in value to £5,249,000. The value of exports in 1884 was £6,945,674, excluding specie, £86,070. The gross weight of diamonds (avoirdupois) contained in packages which passed through the post office at Kimberley is stated to be:

	lb.	oz.	Estimated value.
1876	773	11	£1,807,532
1877	903	15	2,112,427
1878	1,150	..	2,672,744
1879	1,174	4	2,846,691
1880	1,440	12	3,367,897
1881	1,498	..	4,176,902
1882	1,666	..	3,902,502

The declared value of diamonds exported in 1883 was £2,742,470, in 1884 £2,807,329, and in 1885 £2,489,778. The largest diamond known to have been found was 602 carats. The highest price given for a single rough stone was £8,000, being about £100 per carat.

The Cape colonists are chiefly employed in the production of wool, wine, wheat, barley, oats tobacco and Indian corn, and in the breeding of horses, cattle, goats, ostriches and sheep. The wheat of the colony is not surpassed in quality by any grown elsewhere. Valuable forests cover large areas and are extensively worked. Those reserved to the crown cover an estimated area of about 250,000 acres. They are controlled by the Department of Woods and Forests, at an annual charge of some £10,000. The attention of the Government has recently been given to the economical and systematic working of the crown forests, with anticipated satisfactory results. Ostrich breeding is not now carried on so largely as heretofore. Artificial incubation of ostrich eggs has been successfully introduced in many districts. In 1860 the export of ostrich feathers was 2287 pounds; 10 years later it was 28,768 pounds, while in 1884 it amounted to 233,411 pounds. The exports of mohair at corresponding dates were respectively 385 pounds, 403,153 pounds and 4,329,355 pounds. The export of wool has risen from 23,172,785 pounds in 1860 to 37,270,615 pounds in 1884.

Considerable advance has been made during the past year in developing the coal deposits in the Stormberg, on the Northeastern frontier. The coal is shown to be of a superior quality, and is found to be fairly suitable for railway purposes, experiments made by the Government with the view of testing the practicability of using it on the colonial lines having resulted on the whole favorably. The promotion of a company to work the mines at Spriggton and to lay a branch line from the Eastern Railway to the coal pits will doubtless tend to the rapid advancement of this industry. Mining operations on a large scale are carried on in the division of Namaqualand, where extensive copper deposits exist. The O'okiep Mine, the property of the Cape Copper Mining Company, Limited, is one of the richest mines in the world, the percentage of copper being 33. Between this mine and the seaport, Port Nolloth, a distance of 93 miles, a narrow-gauge railway has been laid by the company named at a cost of £158,100. Cape copper production is estimated at 5000 tons fine, made by the Cape Copper Company, and 450 tons by the Namaqua Copper Company. A rich mine of manganese ore, yielding from 70 to 90 per cent., exists in the mountains opposite the Paarl, a town distant about 35 miles by rail from Cape Town. Guano is found in large quantities on the various islets along the coast, and the collection and exportation of it forms a very remunerative industry. The leases of these islands bring in an annual rental of from £6000 to £7000.

The present population of the colony is 800,000. Cape Town has a population of 50,000; Kimberly, 13,590; Port Elizabeth, 13,040. There were last year 989 schools, with 75,713 scholars. The railway mileage open for traffic, which in December, 1883, was 1213 miles, was raised during 1884 to 1453 miles, the capital expended on purchase, construction and equipment to that date being £12,104,757. In 1885 the colony possessed railways of an aggregate length of 1520 miles. The profit on the workings for 1884 was £327,462 net.

The revenue in 1883–84 was £7,533,592, the expenditure £5,374,982; in 1884–85 the revenue had declined to £3,855,625. Government indebtedness in 1885, £20,357,935; corporate ditto, £1,163,867.

Trade Movement, Excluding Specie and Diamonds.

	Import.	Export.
1875	£5,731,319	£4,206,544
1884	5,249,000	4,138,345

The maritime movement is shown in the following table:

	Shipping inward.		Shipping outward.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
1875	1,639	909,826	1,587	898,436
1884	1,923	2,651,006	1,955	2,671,111

The large steamships of the Union Steamship Company and the Castle Mail Packets Company keep up weekly communication with England, the average passage being 20 days, touching at Madeira, and alternately at St. Helena and Ascension. There are besides several lines of coasting steamers.

It would lead us too far to emunerate the many public works other than railways, especially those connected with harbor improvements at Cape Town and Port Elizabeth; suffice it to say that Cape Colony is one of the most completely equipped colonies of Great Britain, and that American trade has good prospects of business there in years of ordinary prosperity. Bordering on Namaqualand, north of the Orange River, on the West Coast, the Germans have acquired a colony, and sanguine expectations were entertained about the copper which the colony of Angra Pequeña, in Great Namaqualand, was stated to abound in. All illusion on the subject has been dispelled. The Teutonic Imperial Commissioner has sent in a minute description of the resources and capabilities of this part of the West African Coast, and has to confess that the expected mineral yield is worth little, that the country is not fitted for agriculture, and, worst of all, that there is absolutely no water throughout Great Namaqualand. The only way to provide a water supply is to dam up the rivers in the mountains, so as to form reservoirs before the streams are lost in the country below, like the Boers have done in South Africa. On the other hand, cattle and horses can be raised profitably, and, according to the commissioner, the prosperity of the colony depends solely on this point.

Among the leading manufacturers who testified before the Royal Commission on Trade Depression in Great Britain was Mr. Thomas Edward Vickers, of Sheffield, connected with the steel firm bearing his name. Mr. Vickers spoke feelingly of the loss of their most valuable market, the United States, by the growth of the American works fostered by a protective tariff. Questioned closely he finally made the admission contained in the following:

"If the price of a certain quality of steel at Sheffield is £40 per ton, and if the price of the same manufacture in America were £42 per ton, you could not, of course, export?"

"It would be impossible to compete with them."

"Because the duty would bring yours up to £53 16/ per ton, while theirs would be £42?"

"Yes."

"Therefore it does not follow that the consumers pay the extra price represented by the duty?"

"Certainly not. They do not pay anything like the amount that is represented by the duty, because the works have been established, and their proprietors must now manufacture at a low price in order to keep the works going; they do not manufacture at a large profit."

"The effect of the American tariff is to keep your goods out, without raising the price in America to the consumer to anything like the amount represented by the duty?"

"That is so now; it was not so in the past."

Professor Bonamy Price: "But do you believe that the word 'now' is to go on?"

"I believe the duty in the past has fostered the building of these works; these works are there and must be kept going."

"At a profit?"

"At a profit or no profit, they must keep them going."

"What I wanted to know was this: whether, supposing the tariff not acting, the works are in the state that they would have been in if they had no duty as far as the steel goes?"

"I believe at the present time they are paying no more for their steel than they would be if they had no duty."

Testimony like this should be convincing to our free traders, since it comes from a manufacturer who has cause to deplore deeply the course of our Government in depriving him of his best outlet. It is not often that disappointed men like the Sheffield steel maker are willing acknowledge the truth.

Minority Representation in Corporations.

That much of the business of the country formerly transacted by single individuals or partnerships is rapidly going to a corporate basis is a striking and suggestive fact. It is not surprising that large enterprises, such as railroads, steamships, telegraphs, and, generally speaking, all kinds of business which require an expensive plant and large amounts of capital, should be conducted by incorporated companies with capital stock. No one individual or firm could or would furnish capital sufficient to carry on these colossal undertakings of themselves. Without the expedient of incorporation the most useful and beneficial schemes would fall to the ground. What the capital of a few men cannot accomplish the accumulated earnings of hundreds and thousands can accomplish. A great deal is said about the oppression of corporations, and the word is in many minds synonymous with odious monopoly. This may be true of some classes of corporations, and more especially of those which are engaged in the business of transportation; but a corporation is far from being an evil thing in itself. On the contrary, a legitimate corporation, properly managed, is an instrument which is often indispensable in working out valuable results. But the growth of corporations during the last 20 years has been something phenomenal. The law has extended the branches of business which may be incorporated until at the present time scarcely any is excepted or denied the privilege. The smallest enterprises, those needing but little capital, are incorporated every day. Partnerships are thus transformed where there would seem to be no necessity for the change. Every valuable invention gives rise to a "company," and individuals are swallowed up and lost in the corporations which they organize.

What are the peculiar advantages which tempt business men to this method of transacting their affairs, for there can be no doubt that the system is becoming more and more popular? In the first place there is the feature of limited liability for debts. An individual does not risk his private fortune by carrying on business in this way. Men who are not willing to risk everything as partners are at the same time perfectly willing to take their chances of success with limited amounts. Then, again, the system of capital stock enables the incorporators to raise money in cases where otherwise they could not, by the sale of stock. Indeed, in many instances, companies have been organized for no other purpose than to sell stock to unwary investors for the profit of the organizers alone. But whatever may be the advantages and merits of incorporation, it has many defects and is peculiarly prone to abuse. The absence of individual responsibility frequently leads to disregard for the rights of others, and it is notorious that corporations do what a single man or a firm of partners would not dare to attempt. The feature of limited liability, unless the corporation has large resources, has had the effect oftentimes of diminishing the confidence which would otherwise be felt in the financial responsibility of the company, and in this way tends to limit credits readily accorded to a firm. Gilt-edged security is demanded on loans and advances, and the company itself is thus hampered by the rule which seems to have been devised exclusively for the protection of the stockholders. Moreover, the powers of a company are limited by its charter, and the validity of its acts depends upon the authority thus conferred upon it.

It is difficult often to say whether the obligations and debts of a company con-

tracted by its officers can be enforced against it, as those officers may have exceeded the powers given to them by the by-laws. Nothing is more frequent than repudiation by companies of notes, &c., given by its officers and the consequent litigation. The courts have held again and again that persons dealing with a corporation are bound and presumed to know its charter and by-laws, and to contract in relation to them. If there is any want of authority or any defect or irregularity in the proceedings the creditor may be restricted to his remedy against the individual officer alone. And it is well known that many small corporations, acting without legal advice, fall into serious errors and act in entire disregard or ignorance of the law. In fact, the method of doing business properly under incorporation is so complicated and so exposed to danger that the disadvantages would seem to outweigh the advantages in cases where the business could be carried on in any other way.

As to the internal management of the company—as between the stockholders themselves—there are certain evils inherent in the present system which are liable to work injustice, and principal among these is the rule that the majority of stock shall control and that the minority, no matter how large, shall have no voice in the management and no representation in the board of trustees or directors. It is true that the majority should have the greater influence and power, but it is neither just nor expedient that by a majority of perhaps one vote the preponderating interest should have the exclusive and almost absolute control of the property and interests of a minority which is practically just as large, and which has substantially the same amount at stake as the majority. It is in the power of this majority to wreck the corporation, or at least to manage it for their own interests as opposed to the interests of the other stockholders. Under forms of law they are in a position to absorb the earnings by electing themselves officers of the company and then as trustees voting these earnings to themselves as salaries. And meanwhile the minority is bound to remain silent and has no right to object. It can obtain no protection from the courts, and it is completely at the mercy of the men in power. It is in this way that the practice of "freezing out" is possible. The value of the stock can be so depressed as to make it absolutely worthless. Those who have been induced by specious promises and gilded representations to invest their money in the enterprise find themselves deserted and betrayed and without any means of redress. And under such circumstances they finally become willing to get out of the company at any sacrifice, and let their stock go for whatever the conspirators may see fit to offer. They know well that no dividends will ever be declared as long as they remain stockholders.

While this scheme of legalized robbery has been practiced quite generally in railroad and similar corporations, there are many instances where it has been applied in the case of manufacturing and business companies. A firm which was organized a few years ago for the manufacture of axe handles was composed of three members, the senior partner contributing all the capital to the amount of $15,000. He was induced by his partners to incorporate the business, giving them a majority of the stock. Since that time he has not received any part of the profits of the business either as dividends or in any other way, nor is there any method by which he can obtain his rights. So far, indeed, has this abuse of corporate power gone that it is becoming more and more difficult to induce men to connect themselves with corporate enterprises unless they are to have control or be allied with the controlling interest. In Colorado it is said that there have been comparatively few corporations organized in the last few years simply on this account.

The remedy for this would be some adjustment whereby the minority would be entitled to representation in the direction. Precisely in what manner this is to be effected without violating the rights of the majority is a very delicate question. It might be possible to have the trustees elected, not on a single ticket, but by sections of stock, a certain number of shares being entitled to elect one trustee. In this way the minority by combination would be able to have its proportionate share of trustees, the majority of stock, however, still retaining the majority in the board of direction. The New York business corporation act provides a somewhat similar method. Some inconveniences might flow from this system, as there might be a deadlock in the election of the third or fifth trustee in cases where the majority and the minority are opposed to each other. But even this could be avoided by giving the majority the power to elect the odd trustee. But the cases where there would be trouble of this kind would be few. The safeguard given to the minority by the induction of even a single member into the councils of the company would be sufficient. Some expedient of this kind seems to be desirable, and there is no reason why the laws should not be changed so as to work out this result.

Liquid fuel is still made the subject of much discussion, especially in England, where the advantages to be derived from its successful use have been very extensively recognized. As a practical substitute for coal, however, for steam raising, the introduction of the fuel has repeatedly been shown to depend largely upon the question of cost, and it is to this, therefore, that attention should now be principally directed. The available source of supply and the means and expense of delivery of the oil to points where it is to be used figure very prominently in the question of economy, a fact which seems to have been overlooked in many cases where trials have been made. The causes of the disappointing results are therefore at once apparent. Under the circumstances it is a matter of general interest to note that in Southern Russia, where the experience with the oil has been probably more extensive than in any other quarter, the matter of cheap transportation facilities is being carefully considered, and there is a promise of early developments which will have an important bearing on the petroleum industry there. It is more than probable that Baku, the principal source of the petroleum supply, will be connected with Batoum, on the Caspian Sea, by a pipe line especially intended for conveying the fuel and furnishing it to consumers at a price much below that now ruling. After what has already been done in that quarter in applying the oil in steam boiler furnaces it is not difficult to see what the effect of the proposed undertaking will be. Steam users generally will have reason to closely watch the developments, and should find in them some things of interest and profit to themselves.

Prospects of the Panama Canal.

A sharp attack against the Panama Canal management has been made by Paul Leroy-Beaulieu, editor of the *Economiste Français*, with the object of showing that the present management is incapable of carrying out the enteriprse and of proposing means to relieve it of its burdens. The burden of M. Leroy-Beaulieu's argument is that the Panama Canal is being gradually, but surely, crushed by enormous interest charges and general expenses. To-day, deducting the net receipts for the Panama Railroad, the annual needs for the two items in question are not less than 45,000,000 francs. When the proposed additional loan, on which there is so much quarrel just now, of 600,000,000 francs has been placed, the charge will rise to 55,000,000 next year, to 70,000,000 the year following and 85,000,000 or 90,000,000 francs in the third year. Thus, assuming that the completion of the canal requires seven or eight years, the new loan of 600,000,000 would hardly suffice to pay simply general expenses and interest accruing during the period named, without a spadeful of earth being turned over. But, even if this were not true, there is no guarantee whatever that the new loan, even according to the guarded statements of the company's engineers, will suffice to complete the work. They state that the 600,000,000 francs will suffice to carry the enterprise to such a point that there would be no doubt as to the final success, and that success would be assured by a final effort which could then be accurately gauged. It is not even clear whether in putting itself on record in this manner the Commission Technique Supérieure does not mean that 600,000,000 francs actually expended in work on the canal would accomplish what they hope, when in reality only half that sum, under the most favorable circumstances, will be available for excavation at the isthmus. M. Leroy-Beaulieu scouts the idea of comparing the Panama with the Suez, so far as its net revenues in the first years after its completion is concerned, when at the present rate a total outlay of 2,000,000,000 francs, the greater part of it borrowed at 7 per cent., will not complete it.

The editor of the *Economiste Français* concludes from this crushing review that private enterprise cannot cope with so colossal an undertaking. He believes that an appeal must be made to the leading powers, the United States particularly, as being the most interested in the completion of the work. He does not want the different Governments to advance funds, which he knows would be promptly refused. All that he urges is that they guarantee interest, not on past issues of capital, but on the sums to be raised to complete the work. The Panama Canal Company, instead of being forced to borrow at 7½ per cent., or cost of negotiations included 8 to 8½ per cent., could obtain money at 3¼ to 3½ per cent. The powers would not have to pay out any money during construction, the interest being paid out of capital, as heretofore—a vicious system, by the way, which has done much to place the company in the position it now finds itself. After the opening of the canal the Governments joining in the guarantee would be called upon to prorate the deficiency between income and expenditures on the basis of the tonnage of each. Advances thus made are to be returned from the profits of later years. There can be no doubt that sooner or later the blind obstinacy of M. de Lesseps and his supporters will put the Panama Canal enterprise in a position where Government interference will become necessary, after having impoverished thousands of people of moderate means in France. The United States is not likely to rush to the rescue now or then, and yet that idea is being industriously fostered in France, to judge from the utterances of men supposed to be well informed. Thus the well-known Paris correspondent of the London *Times* says: "It being certain that if France abandons the enterprise America will take it up and complete it for her own exclusive profit, it cannot be supposed that the Chamber will debar the shareholders from their chance of sooner or later being recouped for their outlay when the canal begins, like that of Suez, to realize profits. The inference is, therefore, that, despite all the difficulties springing up in the company's way, the bill will pass the Chamber, who can scarcely pretend to be more mindful of the subscribers' interests than the subscribers themselves are." This looks as though a fancied eagerness on the part of the United States to perch on the wreck of the Panama Canal Company is used to hector the French Government into its support. Americans will want much better assurances as to the practicability of such engineering feats as the great dam before they will touch M. de Lesseps' scheme. That great promoter has grown angry lately at the skeptical spirit abroad. He was asked by a special committee of the French Chamber of Deputies to submit a balance-sheet and copies of agreements with contractors before they would consent to report favorably on the lottery issue. This was too much for the old man, whose head has been turned by flattery, and he has decided to give up the lottery issue scheme and to raise the many millions by a direct appeal. He may succeed, but then only by offering the bonds at a fearful discount, which will only add to the burdens which are gradually but surely swamping the enterprise.

Spiral or Screw Flood Wheels.*

These wheels are very seldom used or seen in this country, and, in fact, they are but little known, and the principle upon which they act but little understood or appreciated. Their principle of action is the same as the screw propeller, which has in a measure superseded the paddle-wheel in steamboats—the difference being that the propeller is driven round (revolved) by the steam engine, and its oblique vanes forced against the dead water behind, thus pushing forward itself, and everything connected with it, while the screw water-wheel is located and remains in its place, and is driven or revolved by the force of the passing current against its oblique vanes, and transmits this motion through the gearing to any machinery attached to it. To comprehend this similarity better, take a screw propeller and place its axis upon suitable bearings, and parallel with the stream in a strong uninterrupted current, and entirely submerged, and it will furnish a motive-power to drive machinery, the amount of power being in proportion to the area of the vanes and the force and velocity of the passing current. These remarks are only intended to illustrate the similarity of the two principles, and not to recommend the propeller as a suitable flood-wheel, because the action of each being exactly contrary to the other, like the steam engine and force pump, requires a modification in structure and details to fit either and each to its particular purpose.

We have put in several of these wheels to drive light machinery sometimes in comparatively small rivers, and never failed to get the full power calculated and required. As little could be learned from the experience of others with regard to these wheels, we had recourse to experiment, and found that much more power could be obtained by making separate detached vanes or wings, thinned off at the edges—like the blade of an Indian paddle—than by placing a close continuous thread of a screw around the shaft the entire length. The reason of this is, that the first or up-stream end of the solid screw breaks the force and spreads the current, so that little or nothing is gained by extending the screw and shaft further down stream; while detached vanes, like those referred to, allow the water to pass on each side, which keeps up a continuous flow of current clear to the shaft. This current, though partially checked by the vanes, is restored by mingling with the uninterrupted current all around, and ready to act with full force upon other detached vanes, placed further down on the shaft; and by extending the shaft, and a judicious distribution of these vanes or paddles along its whole length, a portion of the force and velocity may be abstracted from a large volume of water and applied to any useful purpose, giving a power sufficient for a grist or a saw mill or any ordinary machinery. The whole-thread screw checks only a volume equal to its own area, and does not get the full benefit of that, owing to the dead water behind the vanes, against which they work.

When such wheels are made to work in a rapid current the vanes may be set more obliquely in the direction of the stream, but for a current comparatively slow the ends should point nearly across the stream. In all cases they should be "weathered" in regular proportion as they approach the shaft (center)—that is, a kind of mold-board twist, like the vanes or sails of a windmill, which gives to the inner end, moving slowly in a small circle, considerable obliquity, and diminishes it gradually toward the outer end, which moves swiftly and in a large circle, and here the face of the vane or sail should stand nearly in the direction of the plane of its motion. The motion is sometimes taken from these wheels to the machinery by an endless chain, composed of alternate open and close links, graduated to the same equal step, and working around and connecting two clutch-wheels, one upon the wheel in the water, the other upon the machinery to be driven. These have projecting clutches or cogs around their circumference at equal distances, corresponding with the open links of the chain, which step into these to prevent it slipping, like the chain in a tread-horse power or the feed chain in a gang sawmill. Light machinery may be driven by an ordinary short-link cable chain by turning out a groove in both wheel and pulley for it to work in. If the chain be short or nearly perpendicular it must be furnished with a tightener, because it stretches fast, especially when first used. There are so many links (joints) that a little wear in each is multiplied considerably in the whole length. If the chain be of some length and nearly horizontal it will not require a tightener. It is not equal to a belt for swift, light motion, but answers well for a slow, heavy motion, and can be used in the water, where a belt is useless.

Such chain gearing, for the purpose under consideration, answers well in warm weather, but is an everlasting source of trouble in frosty weather, as it is continually carrying up water sufficient to cover with ice everything within the reach of its influence. For this reason it is better to place a narrow-rimmed cog-wheel around the down-stream end, and take the motion from this by a pinion and shaft. This is more reliable at any time than the chain, and gives no trouble with the ice, the lower end of the shaft and pinion being—like the water-wheel itself—wholly under water; the only part exposed to ice is at the surface of the water. The whole structure must be guarded by a boom or breakwater, placed obliquely up-stream above it, to shoot floating ice or flood-wood past. If a gear-wheel of large size be placed on the water-wheel its arms should be placed at an angle and weathered, like the vanes or paddles; it will then help as much as hinder the revolutions of the wheel. Mills of this kind driven by the current of a river have been common in some parts of Holland for several generations. These Dutch mills are sometimes built to float upon the water, and can be moved at pleasure to any other suitable locality. They are anchored in a rapid of the stream, or made fast to the shore, and provided with a gang-way to communicate with the land; when custom begins to fail in one place they remove to another, and thus possess a decided advantage over mills built upon *terra firma*.

The first machinery that we ever saw driven by a wheel of this kind was a grist mill of three run of stones. It was built upon the Genessee River, perhaps midway between the city of Rochester and the Alleghanies. It was before the Genessee Valley Canal was made, and boats passed up and down the river past the mill. The mill was built with one end on the bank, which was perhaps 24 feet high; here the door communicated with the road; the other end projected over the river, and was supported upon naked posts. In the rapid under this projecting end of the mill the flood-wheel was placed. A bevel pinion, without arms, was placed upon the down-stream end of its wooden shaft, and another wooden shaft, with a corresponding pinion gearing into the first one, stood up perpendicularly from this end, both shafts having their bearings in the same wooden block; this perpendicular shaft reached up to the mill floor, and had a large spur-wheel at the proper distance from the upper end, around which the three run of stones were placed and by which they were driven. The shaft of the water-wheel was 8 or 9 feet long, and 15 inches in diameter. The screw was of one continuous thread, standing out something over 2 feet from the shaft, and was composed of pieces 2½ or 3 inches thick, each piece being narrow at the end next to the shaft, and spreading out wide at the outer end to close and complete the circuit. They appeared to have been split out of a winding or twisted tree, which gave nearly the required weathering or mold-board shape with little dressing, and the narrow end of each piece was tenoned and mortised into the shaft. A wide bar of iron was bent and fitted to the proper shape, and spiked securely around the outer edge of this continuous screw, thus fastening the outer ends of all the pieces composing it together, and making one piece help another. This wheel was inclosed in a plank box, open at both ends and top, except when a large gate closing the whole up-stream end was shut down to stop it. This stopped the current through the box, and the wheel stopped still; when the gate was raised the current was renewed and the wheel started.

* From Craik's "Practical Miller and Millwright."

In a letter to the Knights of Labor of Chicago, Rev. R. Heber Newton concludes: Labor seems to me to be making a radical mistake in using its new powers of organization, first of all, to attack capital. I do not think the way out of its present situation lies through such a path. I believe that it should use its new-found powers of organization to promote the education of its members, to train them in powers of association, and then turn their forces into the political field, not as a labor party running national candidates, &c., but with the view of bringing the needful influences to bear upon practical reforms which legislation might achieve. There are many of them, and the abuses in question are very patent; and these abuses being remedied and these improvements made, labor's condition would be vastly better for the larger contests it would then have to wage.

A traffic contract between the directors of the Baltimore and Ohio, Reading and Jersey Central companies is said to be nearly consummated, enabling the first-mentioned to do their business directly with New York without the necessity of carrying the Staten Island scheme into effect. Under arrangements for the common use of the several tracks all are entitled to equal privileges, but it is believed that the usual pro rating system will be employed. Central has four tracks from Bound Brook to New York, and has ample facilities for carrying all the Baltimore and Ohio business.

Mr. E. C. Cracknell, superintendent of telegraphs for New South Wales, proposes the adoption of a new plan with the view of obviating the inconveniences caused by the large number of telegraph wires suspended on poles in the streets of Sydney. By this system he proposes to remove the wires from mid-air and to inclose them in a case resembling a frieze, to be placed close to the buildings. The frieze will be supported by pillars about 4 feet high, sunk in the ground to the depth of 4 or 5 feet. Connecting these pillars are cast iron beams 18 inches wide, called friezes, and behind them are to be placed eight racks for holding cables, which are clusters of 50 wires embedded in an insulating substance and coated with cement. They make a cable of 1 inch in diameter. It is estimated that the rack will hold 400 wires easily. On reaching the street crossings the racks will be made to descend to the level of the road, and will be carried underground to the other side, where they will rise to the previous level. A section of the new line is about to be erected.

WASHINGTON NEWS.

(*From Our Regular Correspondent.*)

WASHINGTON, D. C., July 20, 1886.

The adverse report of Mr. Morrison on the Randall bill is still the subject of a great deal of adverse criticism, even among his friends. They feel that it does not cover the ground; that instead of being a defense of the free trade policy as formulated in that direction by his own bill, it is really an invective against Mr. Randall. It was proposed by the free traders to regard this report as a substitute for the caucus address suggested when the Morrison bill was knocked out of time by the rejection of the motion to consider. It does not fill the want; accordingly, it is now proposed to prepare such a document with special reference to the campaign.

RANDALL'S PLANS.

There is much speculation in reference to Mr. Randall's plans in regard to his own bill. It was expected that he would have something to say on the subject last week. A number of Representatives of both parties gathered about him when he took the floor to speak upon the Morrison surplus resolution. He supported that proposition, greatly to the surprise of his friends, not on account of his relations with its author, but as a safe doctrine of finance. At the conclusion of his remarks, without referring to his tariff bill, he replied to an inquiry that he would take that subject up in a parliamentary way. It has been inferred that that meant in committee of the whole. The friends of Mr. Randall are anxious for him to say something in support of his bill, as their opposition to that of Morrison and introduction of one of their own, they think, needs some explanatory remarks for use in the campaign, and to place them properly before the country. These gentlemen do not desire to be viewed in the light of creating factional opposition, and for that reason are anxious to have Mr. Randall state their position on the question of protection as against free trade.

ADJOURNMENT.

There is much speculation upon the subject of adjournment. The session has already reached a duration beyond the average of former Congresses, and with few exceptions even beyond the term of sessions in times of war or other great national emergencies. It is now supposed that the two Houses will be prepared to get away some time between August 1 and 5. This date will leave many important measures undisposed of. An effort is being made to hurry up the new ship bill, even at the reduced amount, so as to have that necessary work begun.

THE NEW CRUISERS.

Secretary Whitney announces that for one of the new cruisers authorized by the last Congress he has purchased and adopted the plans on which the principal steel cruiser for the Japanese Government has been constructed by Wm. Armstrong & Co., of England. The plans are for one unarmored cruiser of 3730 tons, built after the model of the Naniway-Kan; one poop and forecastle deck cruiser of 4000 tons; one heavily-armored gunboat of 1700 tons, and one light armored gunboat of 870 tons. All but the first mentioned are planned by the Bureau of the Navy Department.

The great cantilever bridge across the Ohio River, connecting the cities of Louisville, Ky., and New Albany, Ind., is finally completed. On Thursday, the 15th, it was tested by the builders and owners. A train of about 15 cars, heavily loaded with stone, drawn by two huge Mogul engines of the Louisville and Nashville Railroad, each weighing 90 tons, coupled together in the middle, was run across the bridge and back. Forty wagons loaded with pig iron were on the bridge at the time. The train was afterward run at ordinary rate of speed and suddenly stopped in the center of each span. The test, we understand, was entirely satisfactory. The bridge accommodates foot passengers, wagons and street cars, the railroad track being in the center, and inclosed with high walls of planking.

By decree of the Supreme Court of Orange County the extensive mining and furnace property of the Parrott Iron Company is to be sold for the benefit of creditors. The property in question comprises about 8000 acres of land in Orange and Rockland Counties and in the towns of Monroe, Highlands, Warwick, Blooming Grove and Haverstraw, and includes the Greenwood Works iron furnaces, houses for workmen and other buildings attached; also the O'Neill, Mount Bashan, Hogencamp, Bull and Warwick iron mines, and the railroads and rolling stock and fixtures and improvements of every kind belonging to the company. The sale is the outcome of the company's failure and assignment of property for the benefit of creditors in April, 1885.

The managers of the Chicago Board of Trade have contracted with Mr. George W. Murphy, resident representative of Smith & Eggo Mfg. Company, to rehang all the windows in the large hall of the Board of Trade building with Giant Metal chains. For this contract a special chain is to be manufactured, of extra weight, and run over a patent double balance pulley and patent fixture. The windows range from 400 to 765 pounds in weight, and the ⅝-inch Italian hemp cords with which they were originally hung proved wholly inadequate.

BUFFALO PORTABLE FORGES AND HAND BLOWERS.

Warranted Superior to any other make, and Guaranteed to give Perfect Satisfaction.

For sale by all the leading Iron, Hardware and Machinery Dealers throughout the country

BUFFALO FORGE COMPANY,

BUFFALO, N. Y.

Send for Complete Catalogue.

PENFIELD BLOCK CO.,
Lockport, N. Y.,
Have changed the style and reduced prices on FAUCETS—Both their Patent Lock and Metal Plug.

THE BERLIN IRON BRIDGE CO.,

EAST BERLIN, CONN. * **BINGHAMTON, N. Y.**

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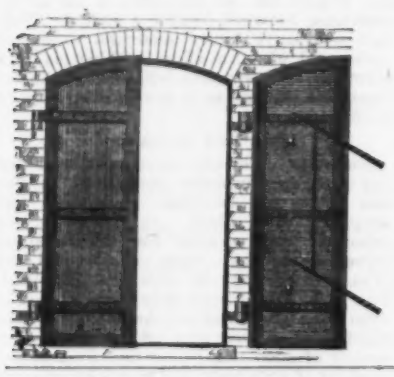
CHAS. M. JARVIS, Vice-Pres. and Chief-Engineer.

BURR K. FIELD, Sec'y and Treas.
JAS. W. PEARL, C. E.,
Manager at Binghamton, N. Y.



IRON BRIDGES & ROOFS.

CORRUGATED IRON FIRE-PROOF

DOORS & SHUTTERS.

We make the only Iron Door or Shutter which is an absolute protection against fire, as proved by actual fire test.

WRITE FOR PRICES.

HERO FRUIT JAR COMPANY,

— MANUFACTURERS OF —

Chace's Machine, Sewing Machine, Paragon, Engineers', Dripping and Bicycle

OILERS,

Oiler Spouts, Sprinkler Heads, Engineers' Sets, Can, Coffee and Bottle, Flask and *Shipping Can Screws*, and all other Regular and Special Goods in *Spun or Stamped Ware.*

All kinds of SHEET METAL GOODS *made to order.*

We have the largest and best facilities for furnishing the best quality of work and promotly.

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ESTABLISHED 1859 — BROCKTON, MASS.
The Only Manufacturers of a Complete Line of
TACK · AND · NAIL · MACHINERY
SEND FOR CIRCULAR. — UPRIGHT DRILLS.

J. E. QUACKENBUSH & SON,
MANUFACTURERS OF
Porcelain, Mineral & Jet Knobs & Escutcheons.
Send for Price List and Terms. | OFFICE 535 6th Ave., N. Y.

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LAFLIN & RAND POWDER CO.,
No. 29 Murray Street, New York,
Manufacture and sell the following celebrated brands of Sporting Powder, known everywhere as
Orange Lightning, Orange Ducking, Orange Rifle,
more popular than any Powder now in use.
BLASTING POWDER and ELECTRICAL BLASTING APPARATUS. MILITARY POWDER on hand and made to order
Safety Fuse, Frictional and Platinum Fuses.
Pamphlets showing sizes of grain sent free.

A. F. PIKE MFG. CO.,

Pike Station, New Hampshire, U. S. A.
Cable Address, "Pike, Haverill."
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The Largest Manufacturers and Dealers in Stones for Sharpening all Edge Tool.

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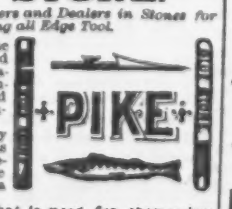

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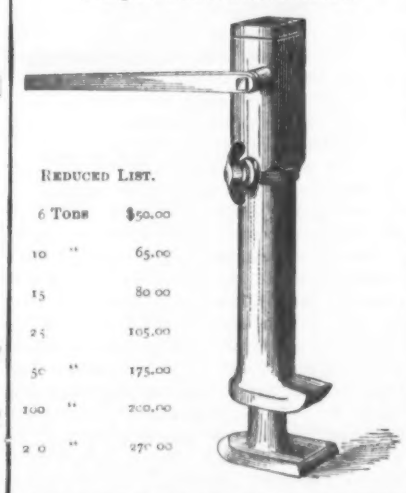
Hydraulic Lifting Jacks.
Cheapest Jack in the Market.



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6 Tons	$50.00
10 "	65.00
15	80 00
25	105.00
50 "	175.00
100 "	200.00
200 "	270 00

Send for list of other sizes and discounts. Makers of Hydraulic Punching Bears, Girder Testers, Rail Benders, &c.

McCOY & SANDERS,
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OHIO CLIP WORKS,
Westville, Ohio,
Sole Manufacturers of the
"BAKER" CLIP,
For Singletrees, Heavy Axles etc. "Baker" Lap Links, "Baker" Oval Lap Rings, Ferrules and Hooks, Neck Yoke Irons, etc. Best Goods Made. Ask for them where you buy your Hardware or send for Prices &c

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PATENTED ARTICLES
OF
Malleable Iron.
Hammer's Mall. Iron Hand Lamps.

SCREW, KEROSENE SIZE.

Hammer's Adjustable Clamps.
Hammer's Malleable Iron Oilers, 3 Sizes.
Hammer's M. I. Hanging Lamps.

NEW pattern Heavy Screw Clamps; strongest in the Market.

For sale by all the principal Hardware Dealers.

Send for Price List.

MALLEABLE IRON CASTINGS
Of superior quality, and Hardware Specialties in Malleable Iron made to order.

HAMMER & CO.,
BRANFORD, CONN.

Chapman Valve Mfg. Co,
MANUFACTURERS OF
VALVES AND GATES
—FOR—
Water, Steam, Gas, Ammonia, &c.
GATE FIRE HYDRANTS,
with and without
INDEPENDENT NOZZLE VALVES.

All Work Guaranteed.

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Samuel Martin,
MANUFACTURER OF
Theatrical Hardware,
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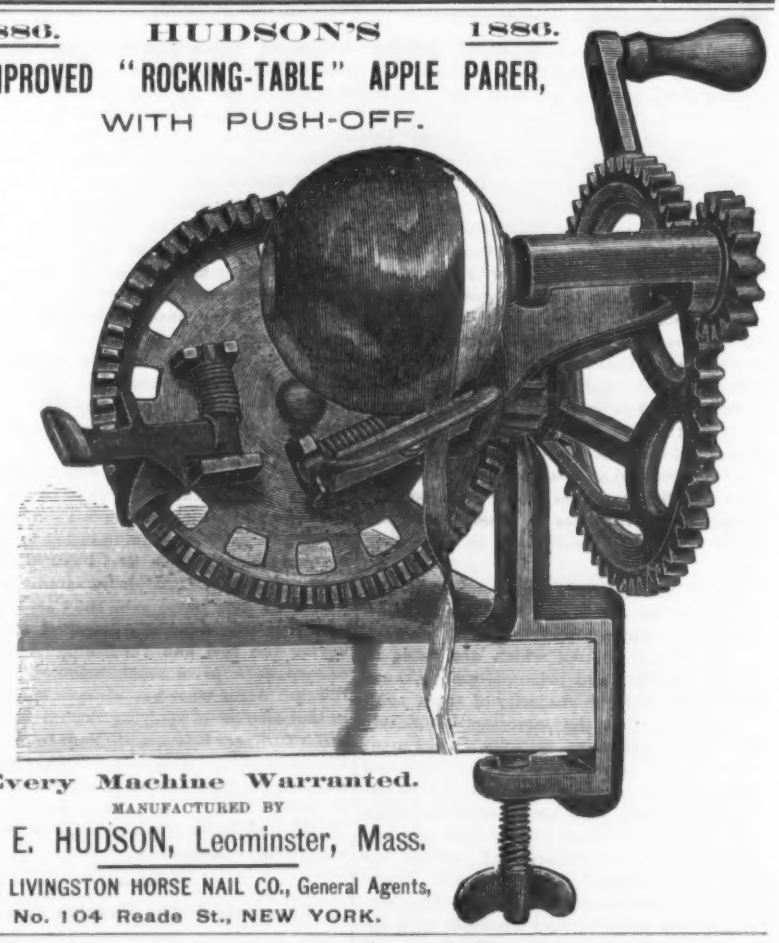
The T. H. Bullock
BELLOWS The Best for the Money. Cleveland, Ohio. **FORGES**

1886. HUDSON'S 1886.
IMPROVED "ROCKING-TABLE" APPLE PARER,
WITH PUSH-OFF.



Every Machine Warranted.
MANUFACTURED BY
C. E. HUDSON, Leominster, Mass.
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No. 104 Reade St., NEW YORK.

SOLID STEEL BLADES.

Champion Drawing Knives.

Wheeler, Madden & Clemson Mfg. Co.,
MIDDLETOWN, N. Y.

Adjustable HANDLES.

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Pat. Sept. 8, 1885.

VIRGINIA NAIL AND IRON WORKS COMPANY,

LYNCHBURGH VIRGINIA.

NAILS and **Bar Iron** of Superior Finish, made exclusively from Pig Iron

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MERIDEN MALLEABLE IRON CO.,
MERIDEN, CONN.,
Manufacturers of a Full Line of the Latest Improved
Patent Adjustable Iron Planes.
THE BEST NOW IN THE MARKET.
Send for Full Descriptive Catalogue.
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Manufacturers.
Wood Engraving, Electrotyping and Printing.
Publisher of The Manufacturers' Exchange.
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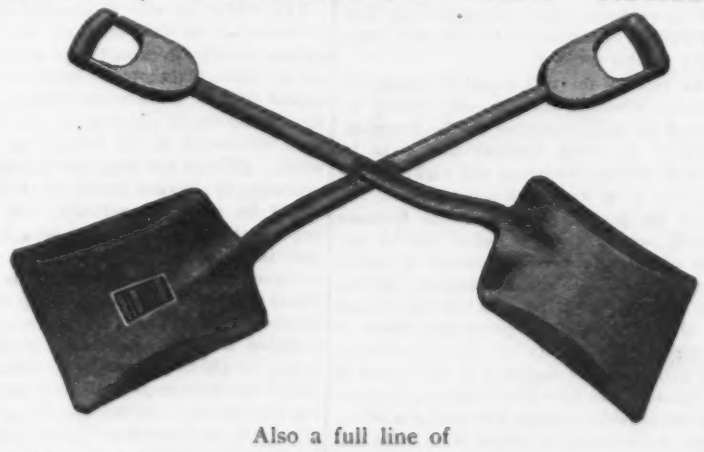

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for the
HARDWARE TRADE.

COMMON SENSE POST HOLE DIGGERS.
COLD CHISELS, PUNCHES.
WOOD, COAL and STONE } WEDGES.
Prices quoted on application.

J. C. McCARTY & CO., Direct Representatives,
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THE

Iron Age Directory

AND

Index to Advertisements.

Special Notices.

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Special Sale of Second-Hand, in Good Order.

½ H.-P. Engine and Boiler, $50.
1 " " " " $90.
2 " " " " $135.
2½ " " " " $150.
3 " " " " $140.
4 " " " " $250.
6 " " " " $ 75.
8 " " " " with hoisting rig, $250.
10 " " " " " " $300.
10 " " " " on wheels, $300.
10 " " " " " skids, $275.
15 H.-P. Engine, $175; 20 H.-P. Engine, $190, and many others.
Steam Pumps, Injectors, Tube Cleaners, &c., 40 % less than market prices.

AMERICAN TOOL CO.,
Cleveland, Ohio.

Carron No. 1

SCOTCH BLACK BAND PIG IRON.

Cable address,
"SWAN,"
Glasgow.

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To take one-half interest in an old-established business, Shelf, Carriage and Heavy Hardware and Mill Supplies. Best location in Central New York. Capital required about $7000. Splendid opportunity. Address "P. M.,"
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Wanted, parties traveling with Hardware to sell my patent Steel Wire Anti-Rattlers on commission to the Hardware Trade. Address for particulars, STILES FROST, 178 Devonshire St., Boston, Mass., stating route.

ARCHITECTURAL IRON WORK.—A competent, reliable man with first-class recommendations who has held similar position wishes situation as Superintendent or Foreman in fitting or erecting Architectural Iron Work. No objections to leaving New York. Address "IRON WORK,"
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A first-class manufacturing property completely equipped for the manufacture of either metal or woodwork, and with a natural-gas well but a few hundred feet away. The property is located on one of the great trunk line railroads, and adjoining the freight depot, so that no carting of either supplies or finished goods is necessary. For further particulars, please address
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READ IT.—A thorough and practical man of 15 years' experience in Hardware, wholesale and retail, wants position as Buyer, Salesman or Traveler. Long experience in retailing goods. Four years as Traveler with manufacturers through South and West. Best of N. Y. references.
Address "SHERIDAN,"
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WANTED,

Responsible Sole Agent in every city in the United States and Canada for Seeds' Reversible and Self-Cleaning Water Filter. It is the best and cheapest ever offered. Sample mailed free for 50 cents stamps. A liberal discount allowed. WORKS, 72 Reade Street, N. Y.

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JERSEY CITY SMELTING WORKS,
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Special Notices.

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The largest land owners at SOUTH CHICAGO and in the Calumet Region, offer on liberal terms

SITES FOR FACTORIES,

Lots or acre property on river and railroad, connecting with the **B. & O., Chicago & Atlantic, Chicago & E. Illinois, Chicago, R. I. & P., Chicago & W. Indiana, and Belt Line, Ill. Cent., L. S. & Mich. So., L., N. Albany & Chicago, Mich. Cent., N. Y., Chicago & St. Louis and P., Ft. W. & Chicago Railroads.**

Number of passenger trains to and from Chicago to South Chicago daily is about 75 each way.

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In buildings and plants, - - 4,100,000.00
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Contractors for River and Harbor Improvements, Dredging Dock and Pier Construction, Pile Foundations, etc. Estimates on application.

Office, 170 Dearborn Street, Chicago.

For Sale.

The property and works of the Steel Company of Canada (Ld.), in Liquidation, situate at Acadia Mines, County of Colchester, Province of Nova Scotia, Dominion of Canada.

The property extends to about 33,000 acres, well timbered.

There are two Coke Blast Furnaces, weekly capacity 400 tons; Coke Ovens; Rolling Mill, capacity 200 tons per week; Wheel and general Foundry, capacity 200 wheels per day.

The Mines are fully developed and in first class working order, and the works are now in operation.

The Dominion Parliament has granted a bounty on all Pig Iron manufactured in the Dominion of $1.63 per ton of 2240 lbs. for three years from 1st of July instant, and $1.12 per ton of 2240 lbs. for three years from 1st of July, 1889.

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The Mine is thoroughly equipped with all the appliances necessary for an output of 400 tons per day, and is situated within two miles of the main line of the Intercolonial Railway, with which it is connected by a branch belonging to the property. All in first-rate order.

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CHEAP.

One 17 ft. bed, 30 in. Engine Lathe.
One 16 ft. bed, 25 in. Engine Lathe.
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One Foot-Power Screw-Cutting Lathe.
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One No. 3 Brown & Sharpe Screw Machine.
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One 2-in. Pipe Threading and Cutting Machine.
One small Drop Press, with Power Lift.
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An Unusual Opportunity for a Good Business Manager.

A party having the general management of a large Iron and Wood working establishment located in the Northwest desires to sell a portion of his interest in said corporation to a man qualified to fill his position; only a man of successful business experience need apply. Special qualifications needed are in manufacturing line, as selling department is well handled. Business is well protected by patents. Anywhere from $30,000 to $40,000 can be invested in stock that has paid 20 % per annum on the average for past nine or ten years. The ill-health of owner is the reason for selling. Business very snug; no long credits.

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One 20 x 48 Horiz. Corliss Engine.
One 10 x 24 Horiz. "
One Horiz. Tubular Boiler, 80 H.-P.
One " " 60 H.-P. Steel Shell.
Four " " 50 H.-P.
One Upright " 30 H.-P.
One Merrill & Son Air Cushion Hammer, 60 lb.
One Engine Lathe, 36 in. swing, 12 ft. bed.
One Iron Planer, 24 x 24 x 6 ft. New Haven Mach. Co.

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WANTED,

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A MECHANICAL ENGINEER and Draughtsman, thoroughly competent and with a varied experience in the designing and construction of Engines, Boilers, Machinery, Structural Work, &c., is open for an engagement.
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METALLURGICAL ENGINEERING.

I am prepared to furnish

PLANS, SPECIFICATIONS and ESTIMATES

AND TO

SUPERINTEND THE CONSTRUCTION OF ROLLING MILLS AND MACHINERY, REGENERATIVE GAS FURNACES, TUBE AND PIPE MILLS, ETC., ETC.

I represent the latest improvements in all the above branches.

M. V. SMITH, Metallurgical Engineer,
Rooms 16, 17, and 18 Bissell Block. Pittsburgh, Pa.

For Sale.

ROLLING MILL MACHINERY.

Engines, Shears, Punches, &c. Can now be seen standing at mill, Philadelphia, Iron and Steel Co., 939 North Delaware Avenue. Prices on application.

JOS. C. POULTERER & CO.,
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Forty-Two Inch Lathe

AT A LOW PRICE.

Having purchased at a low price, from a well-known builder of Machine Tools, a lot of Patterns and Tools partly finished, we are enabled to offer a FORTY-TWO INCH by EIGHTEEN FEET TREBLE-GEARED LATHE at a figure considerably less than it would cost to build it.

It is the only one we shall have to offer at this figure it is of excellent design, strong and well proportioned.

THE

NEWARK MACHINE TOOL WORKS,

NEWARK, N. J.

FOR SALE AT VERY LOW PRICES—Several new Engine Lathes of 16 in., 18 in., 24 in. and 28 in. swing, of late design, with great power and all modern improvements. For description and prices, address J. B. REED,
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Successors to
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WHOLESALE
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19 Murray St. and 15 Park Place, N. Y.

Sales held weekly for the trade. Consignments solicited. We refer to the leading manufacturers and importers.

MECHANICAL DRAUGHTSMAN.—An active, young, experienced Draughtsman, expert in planning, able in executive administation, ingenious in details skilled in general shop and constructive work, conversant with the design of Rolls for Shape and Bar Iron, well fitted to take charge of any department of Iron Works, is open to a liberal offer. Any position less than $2000 per annum is not desired.
Address SKILL, care of *The Iron Age*,
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SECOND-HAND ARC LIGHTS.

20, 25 and 35 light Dynamos, with single or double lamps, for sale cheap; all in perfect order and one of the best systems of electric lighting in use. Also 125 horse-power Westinghouse Automatic Engine, run only six months.

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WANTED.—A man fully posted in the Jobbing Hardware business, and having $20,000, wishes to unite with two other men well posted in the business also and having an equal amount or not less than $10,000 each, to establish a business in some Western city. No one need answer unless he has the dollars to plank down. Address "UNITY,"
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Special Notices.

Second-hand Machinery in Good Order. For Sale Cheap.

1 Engine Lathe, 48 in. x 20 ft. bed.
1 " " 36 in. x 18 ft. "
1 " " 28 in. x 15 ft. "
1 " " each 24 in. x 20 in. and 24 ft.
1 " " 24 in. x 12 ft. bed. Fifield
1 " " 22 in. x 12 ft.
1 " " 20 in. x 8 and 10 ft. bed. Putnam.
1 " " 18 in. x 9 ft.
1 " " 15 in. x 6 ft. Porter. Rod feed only.
1 each " 16 in. x 6 ft. and 8 ft.
1 " " 14 in. x 6 ft.
1 " " 12 in. x 5 ft.
2 " " 13 in. x 5 ft. Wm. Sellers & Co.
1 each " 11 in. x 4 and 5 ft.
1 Planer.
1 " 17 in. x 17 in. x 3½ ft.
1 " 20 in. x 20 in. x 4 and 5 ft.
1 " 30 in. x 36 in. x 7 ft.
1 " 30 in. x 30 in. x 8 ft.
1 " 24 in. x 24 in. x 5 and 6 ft.
1 " each 42 in. x 42 in. and 9 and 10 ft.
1 Shaper, 10-in. stroke. Pratt & Whitney.
1 Shaper each 12, 15, 20 and 28 in. stroke.
1 Crank Planer.
1 32-in. B. G. & S. F. Drill.
1 each Upright Drill, 20 and 24 in., with Back Gears.
1 Lincoln Pat. No 2 Miller.
1 Index Miller. Pond.
1 each 3, 6 Spindles, No. 0 Drills. P. & W. Co.
1 each Nos. 1 and 2 Screw Machines. Wire Feed. Pratt & Whitney.
1 No. 3 Screw Machine. Plain. P. & W.
1 375-lb. Drop Hammer. Beecher & Peck
1 No. 20 Bliss Press.
10 Foot Presses, assorted.
8 Power " "
12 Punching and Shearing Machines, assorted.
2 Return Tubular Boilers, 35 H.-P.
1 Vertical Boiler, 25 H.-P.
2 Hoisting Engines, 8 and 10 H.-P.
1 Small Hand Miller.
1 Horizontal Engine, each 25 and 45 H.-P.
1 Vertical Engine, 10 H.-P.
1 Die Sinking Machine.
1 48-in Boring and Turning Mill. Pond.
1 40-lb. Bradley Hammer.
1 12-in. Shaper, 2 Tables. Betts.
1 No. 6 Root Blower.
1 Suspension Drill.
1 each 150 and 400-lb. Steam Hammers. Morgan & Williams.
1 Rogers' Wood Planer, 24 in. x 5 in.

Also full line of New Machinery.
New York Agency TAYLOR MFG. CO., Engines, Boilers, &c. Correspondence solicited.
PRENTISS TOOL AND SUPPLY CO.,
P. O. Box 3362, No. 41 Dey St., New York City.

A Patented Riveting Machine For Sale

BY STATES OR TERRITORIES.

Capable of riveting from No. 18 Wire to ½ inch Iron; will make any shaped head (flush or raised), and tight or loose joints.

For particulars, apply to

THOMAS MORTON,

65 ELIZABETH ST., NEW YORK.

For Sale.

Foundry, 100 x 40 ft. and Machine Shop 60 x 20 ft., both with water privilege; also Japan and Packing House 62 x 22, Stove Storehouse 50 x 14 and Storehouse and Box Shop 30 x 20. All in good repair and running order; five minutes from steamboat and ten minutes from two railroad stations. Address

WILLIAM KEIGHLEY'S EST.,
Middle Haddam, Conn.

FOR SALE.

6284 feet of 2¼-inch Cold-Rolled Shafting
592 Hangers.
300 Couplings.
577 feet of 3-inch Cold-Rolled Shafting.
53 Hangers.
25 Couplings.
1583 feet of 4-inch Cold-Rolled Shafting.
94 Pillow Blocks.
97 Couplings.
392 feet of 5-inch Cold-Rolled Shafting.
28 Pillow Blocks.
70 Couplings.
All cold-rolled and in first-class condition, having been but little used at the late Exposition, at very low prices.

SHAKSPEARE, SMITH & CO.,
No. 219 Girod St., New Orleans, La.

Cash Advances Upon Iron.

PENNSYLVANIA WAREHOUSING

AND SAFE DEPOSIT CO.,

Girard Building, 3d St., below Chestnut, Philadelphia.

This Company is prepared to establish yards throughout the iron regions at small cost, and to make advances at moderate rates of interest.

F. R. PEMBERTON, *President.*
JOHN MASON, Jr., *Treas. and Secy.*
GEO. H. EARLE, Jr., *Solicitor.*

Directors.—Clayton French, John H. Converse, John H. Catherwood, George T. Lewis, John W. Hoffman, Edmund H. McCullough, F. R. Pemberton.

NEW LOCATION WANTED

FOR MANUFACTURING.

A manufacturing concern, long and well established, desires to make a change from a small place with no railroad to some live town of 5000 or over. The line of goods is a very fine one, and sell to the Hardware Trade. About 100 of the best class of mechanics are employed, and the number can be largely increased. This is a rare chance for some good place to secure one of the finest branches of manufacturing. Correspondence is solicited, setting forth advantages, inducements, &c.
Address "MANUFACTURER,"
Office of *The Iron Age*, 66 and 68 Duane St., N. Y.

PRICE BOOKS.

LARGE SIZE, 500 Pages, 6 x 9¼ in. each, $3.00.
POCKET SIZE, 250 Pages, 4 x 7 in., each, $4.00.
Send for Circulars.

B. LAMBERSON,

PORTLAND, OREGON.

Wanted to Buy

Iron and Steel Scrap of all descriptions, such as Old Iron and Steel Wire Rope, Burnt and Malleable Iron Rails, &c., &c.

We have for sale Pig Iron, Merchant Bar Iron, Sheet Iron, Nails, &c.

SITES, GILL & CO.,
222 and 224 So. Third Street,
Philadelphia, Pa.

A BUILDING standing on a large lot, suited for a manufacturing concern, and located in a Southern town having ample railroad and steamboat connections, can be had on reasonable terms, and inducements given.
Address
"SOUTHERN TOWN,"
Office of *The Iron Age*, 66 and 68 Duane St., N. Y.

Special Notices.

MACHINERY, SECOND-HAND AND NEW, ON HAND.

16 in. x 42 in. Planer. Bridgeport. New.
18 in. x 3 ft. " Wheeler. Good.
20 in. x 4 ft. " New Haven. Good.
20 in. x 6 ft. " Pratt & Whitney. Good.
24 in. x 4 ft. " Thayer & H. Good.
24 in. x 6 ft. " Powell. New.
24 in. x 7 ft. " Ames. New.
26 in. x 6 ft. " Putnam. Good.
26 in. x 6 and 8 ft. Planers. Powell. New.
32 in. x 10 ft. " " Pond. Nearly new.
34 in. x 10 ft. " " P. & W. Nearly new.
12 in. x 6 ft. Engine Lathe.
14 in. x 5¾ ft. " Harris. Good.
15 in. x 6 ft. " Wood & Light. Good.
15 in. x 7 ft. " Pond. Good.
16 in. x 6 ft. " Ames. Good.
16 in. x 6 ft. " Blaisdell. New.
18 in. x 8½ ft. " New Haven. A 1.
18 in. x 9 ft. " Belden. A 1.
18 in. x 12 ft. " Wright & Smith.
19 in. x 10, 12 and 14 ft. Engine Lathes. Pond. Nearly new.
20 in. x 10 ft. Engine Lathe. Blaisdell & Harris.
29 in. x 12 ft. " Harrisburg. Fair.
32 in. x 10 ft. " Pond. Nearly new.
34 in. x 12 ft. " Harrisburg.
30 in. Upright Drill, Back Geared and S. F. Pond. Nearly new.
26 in. Upright Drill, Bk. Geared and S. F. New Haven
20 in. " Plain. Prentice.
12 in. stroke Sellers' Traveling Head Shaper.
24 in Shaper. Hendey. A 1.
15 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20 in. Shapers. G. & Eberhardt.
Pratt & Whitney Die Sinking Machine. New.
Lincoln Pattern Milling Machine.
Lincoln Pattern No. 3 Milling Machine. P. & W. New
Pond Index Milling Machine. A 1.
Nos. 2, 3½ and 4 Stiles Presses.
No. 3 Double Crank Stiles Press.
No. 6 Wilder 20-in. Punch Press.
36-in. Bliss Squaring Shear. Power. Extra Heavy. A 1.
25 and 40 lb. Bradley Hammers.
Two Bradley Forges, No. 2. A 1.
50-in. Vertical Boring and Turning Mill. A 1.
72-in. " " " 2 Heads. New.

If you do not see what you want, write and specify just what is required. We have other machines not enumerated above.

E. P. BULLARD,
14 Dey Street, N. Y.

SCRAP IRON.

We buy all kinds of Iron and Stee Scrap, Burnt Iron, Old Rails, &c., &c. Write us, naming quantity, price, &c.

ROBINSON & ORR,
115 Water St., Pittsburgh, Pa.
(ESTABLISHED 1859.)

IRON AND STEEL SCRAP

Bought and Sold.

JAMES H. LOGAN,

Pig Iron Commission Merchant,
93 Fourth Ave., - - PITTSBURGH, PA.

SCRAP IRON.

We buy all classes of Iron and Steel Scrap Wrought Turnings, Cast Borings, Burnt Metal, &c
GEO. A. McLEAN & CO.,
Room 28, Lewis Block, P. O. Box 455,
Pittsburgh, Pa.

NOTICE.

We buy and sell all classes of Iron and Stee Scrap. Correspondence solicited.
JOS. C. POULTERER & CO.,
204 S. Third St., Philadelphia

Cotton Gin Ribs.

HARDWARE MERCHANTS

and others furnished with materials of all kinds for making and repairing COTTON GINS. RIBS and SAWS for repairing ALL makes of gins. Send for Price List. Address THE BROWN COTTON GIN CO., Manufacturers of Cotton Gins, Feeders and Condensers, New London, Conn.

FOR SALE.

PLANT FOR STEEL AND IRON FORGINGS Steam Hammers, Engine, Boiler, &c.
ROOT BLOWERS, Nos. 1, 2, 4, 5 and 7.
STURTEVANT BLOWERS, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10. Engines, Boilers, Pumps, Tanks, Rolls, and General Machinery. Careful attention given to purchasing for parties out of the city. Correspondence solicited. C. R. BIGELOW, M. E.,
45 Dey St., New York City

FOR SALE.

Three-Spindle Nut Tapper, Hoop Iron Testing Machine, Column Milling Machine, 16 in. x 8 ft Lathe, Small Slotter, Ames Gear Cutter, two Bolt Cutters.

A. G. BROOKS,
261 North Third Street, - Philadelphia.

FOR SALE.—The property known as the Stirling Chain Works, situated on the north side of Amherst Street, Black Rock, Buffalo, N. Y., No. 250, within two minutes' walk of the Belt Line Railroad Station. The works are in perfect order for immediate operation, and possess all the machinery requisite for the manufacture of Chain from ¼ inch up to 2¾ inches. Facilities for receiving and shipping are admirable. This property can very easily, cheaply and advantageously be adapted to any manufacturing business. For further particulars apply to
Messrs. JOHN OTTO & SON,
Buffalo, N. Y.
Descriptive circular sent on application.

For Sale.

The Norfolk Southern Railroad Company has for sale about 250 tons 45-pound iron rails, and will deliver them on its wharf at Berkley, Norfolk Harbor, Virginia, August 15. Tenders invited to purchase for cash as above.

M. K. KING, General Manager.

Hoisting Engines and Elevators.

New 10 H.-P. worm-geared Hoisting Engines; Steam Cylinder 6 in. bore, 8 in. stroke; geared 16 to 1; Drum 20 in. diameter, 18 in. long; improved Cone Friction for Hoisting and Lowering Same style, *double cylinders*, 20 H.-P.
WAREHOUSE ELEVATORS. All attachments.

A. G. BROOKS,
261 N. Third Street, Phila.

To Iron and Nail Mills.

I want agency for St. Louis and tributary trade, on commission, of a B. Bar and Sheet Mill; a C. C. Bar and Plate Mill; a Steel Plate Mill and a Nail Mill. Water transportation here preferred. Ten years' acquaintance with trade, and satisfactory references. Am here to stay, and want permanent agency.
Address W. C. KENNEDY,
1110 Pine St., St. Louis, Mo.

THE advertiser, who has had a long experience as Bookkeeper, Traveling Salesman and Agent for manufacturer, and with an extensive acquaintance with the Hardware and Iron trade West and South, desires a position, in the city preferred, though he would travel part of the time. References first-class
Address "W. H. S."
Office of *The Iron Age*, 66 and 68 Duane Street, N. Y

Trade Report.

British Iron and Metal Markets.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, July 21, 1886.

Scotch Pig.—There is no change in this market. Quotations remain the same as last week.

Coltness, alongside, Glasgow			45/6
Langloan,	"	"	43/
Gartsherrie,	"	"	43/
Summerlee,	"	"	46/
Carnbroe,	"	"	41/6
Glengarnock,	"	Ardrossan	42/
Eglinton,	"	"	39/6
Dalmellington,	"	"	40/6
Shotts,	"	at Leith	44/

Carriage from Ardrossan to Glasgow is 1/ ℔ ton.

Cleveland Pig.—The market shows no symptom of change from the dullness that has ruled for some time past. We continue quotations as follows, f.o.b. shipping ports:

Middlesboro',	No. 1 Foundry		32/6
"	No. 2 "		31/9
"	No. 3 "		30 @ 30/6
"	No. 4 Forge		29/6

Bessemer Pig—The market remains dull and inactive, and there is no change in quotations, viz: W. C. Hematites, 42/ for mixed lots, Nos. 1, 2 and 3, equal portions, f.o.b. shipping ports.

Manufactured Iron.—The market remains in the same irregular condition noted last week. No change in quotations:

	£	s.	d.		£	s.	d.
Staff. Ord. Marked Bars	7	0	0	@	7	10	0
" Medium "	5	10	0	@	6	0	0
" Common "	4	17	6	@	5	5	0
Hoops, 20 W. G. and over.							
" Common Best	6	15	0	@			
" Medium	6	0	0	@	6	10	0
" Common	5	5	0	@	5	15	0
Sheets, 20 W. G. and under.							
" Ordinary Best	7	5	0	@	8	0	0
" Common	6	5	0	@	7	0	0

Steel Rails.—The market is a little steadier, but there is no activity, and prices remain the same as quoted last week, viz.: £3. 7/6 @ £3. 10/, f.o.b. shipping ports.

Old Rails.—The market is a little steadier; no change in quotations, which are as follows: Old D. H.'s, c.i.f. New York, 55/.

Scrap.—There is nothing new to report in the condition of this market; prices are unchanged, as follows: Heavy Wrought, 50/; Bessemer Crop Ends, run of mill, 54/ @ 56/, c.i.f. New York.

Copper.—The market is irregular, and we quote prices for Chili Bars lower than last week, viz.: £38. 10/ @ £39, and Best Selected £43 @ £43. 10/.

Tin.—The market is decidedly weaker; it has declined at least £2 since last week. We now quote Straits Tin, spot, £98 @ £98. 5/, and futures £98. 15/ @ £99. 5/.

Tin Plates.—The market is unchanged, and last week's prices may be quoted, viz.:

Tin Plates, 10x14,	1st qual.	Charcoal		18/	@ 19/
"	"	2d	"	"	16/ @ 17/6
"	"	1st	"	Coke	15/ @ 15/6
"	"	2d	"	"	13/6 @ 14/

Spelter.—There is no change worth reporting in this market. Prices may be quoted for Ordinary at shipping ports, £13. 15/ @ £14.

Lead.—Market dull and featureless; no change in quotations, viz.: Common English Pig, £13. 15/ @ £14.

Freights.—Steam from Glasgow to New York, 5/.

Financial.

Office of *The Iron Age*,
WEDNESDAY EVENING, July 21, 1886.

The most disturbing influence in the week was the adoption by the House of Representatives of the Morrison resolutions directing a distribution of the Treasury surplus until it shall not exceed $100,000,000. Bankers are not altogether agreed as to the probable result, but as a rule the proposal is regarded with disfavor as tending to unsettle business in its various relations, while not a few argue, with some show of reason, that action in accordance with the House resolution "would force silver monometallism." In other words, according to the *Financial Chronicle*, "the conclusion seems to be unavoidable that we will have in a year, by the simple operation of the present coinage law, a net silver dollar balance in the Treasury of over $126,000,000; so that, unless the general balance is increased, other kinds of cash holdings will have to decrease correspondingly. Now, let the decrease in the balance proposed by this resolution go on to the extent of $75,250,000 at the same time that this accumulation of silver dollars is in progress, and the result would be that during the year $101,250,000 would be taken out of the usual net gold and legal-tender holdings of the Treasury, even if the public did not get frightened at what was approaching and draw out the entire gold balance, the latter being the more reasonable supposition." It is inevitable that any unsettling of values acts prejudicial to trade.

A call for $4,000,000 of the 3 % loan of 1882 was issued by the Secretary of the Treasury on Monday, interest to cease September 1. This call leaves only about $132,000,000 of that issue outstanding, nearly all held by the Treasury to secure national bank circulation. The payment of $25,000,000 more will compel the banks to surrender circulation to an amount equal to 90 % of the bonds called, or to change the form of the security by purchasing Treasury bonds of the 4 % or 4½ % issue, yielding only about 2½ % interest.

Stocks have been irregular, but generally strong. On Thursday a sharp upward turn in the Eries was attributed to heavy buying in London. Central N. J., Western Union and the grangers also advanced. On Friday further buying on London account was sufficient to lower the rates for sterling. On Saturday the market was dull, but steady, and the day following a rise in New York and New England, due to a promised connection with New York via Danbury, was the feature. On Monday the better feeling was strengthened by a harmonious agreement of the anthracite coal companies to restrict the August production. To day interest centered on the coal shares, which remained essentially at the advance of the previous day. Quotations as follows: Jersey Central, 56⅛; Union Pacific, 57¼; Lackawanna, 127⅜; Delaware and Hudson, 98⅜; Erie, 33⅛; Kansas and Texas, 31⅞; Lake Shore, 86¾; Louisville, 43⅞; New York and New England, 46⅛; Northwestern, 113⅜; Pacific Mail, 56⅞; Omaha, 46⅞; Texas and Pacific, 11; Western Union, 66⅞.

United States bonds closed as follows:

	Bid.	Asked.
U. S. 3 per cents	100⅝	—
U. S. 4½s, 1891, coupon	112	112¼
U. S. 4s, 1907, coupon	126¾	127
U. S. Currency 6s, 1895	126½	—
U. S. Currency 6s, 1896	129¾	—
U. S. Currency 6s, 1897	132	—
U. S. Currency 6s, 1898	134¾	—
U. S. Currency 6s, 1899	137	—

Advices from the country at large respecting the condition of trade are generally favorable, aside from the element of uncertainty referred to above. Signs in Chicago promise a good trade. In Boston a permanent improvement is looked for in all branches. In Philadelphia a resumption of activity is expected earlier than usual. In Savannah there is a slightly better movemens, but collections are slow. In Galveston the markets have shown more strength, but neither in the South or West as a whole is there anything especially deserving of remark.

The general markets are by no means active. Wheat is dull in consequence of heavy receipts, both of spring and winter. Moreover, advices from the Northwest are more favorable for spring, the recent rains having given relief. Prices are down a fraction, but corn and oats are advanced. The wheat harvest is well under way in Southern Minnesota and Dakota. Cotton is lower. Exports are not improved. Dry-goods jobbers offered the most cheering accounts, buyers being present in this market in large numbers, and full confidence is expressed in the season now near at hand. In this respect there has been a marked change within the last 60 days.

The domestic money market is not essentially changed, so that it cannot well be said that there is a tendency either to hardening or to greater ease. Commercial paper is in good supply, but there is little demand. We quote 60 to 90 days 3½ @ 4%; longer dates, 4 @ 5 %. In the West the wheat movement, though increasing, is hardly sufficient to make an active demand for money. In our local market bankers are expecting more inquiry for funds as the season advances.

Foreign exchange is lower, the posted rate standing at $4.87 @ $4.88½. The market dull and heavy. Respecting the recent shipments of gold from the United States to Europe, a Berlin letter in the London *Statist* of the 10th inst. says the gold arriving there does not flow in commercial channels, but disappears in the Imperial bank or is drawn on by Russia, both of whose Governments, as well as that of France, are persistingly hoarding gold.

The weekly bank statement shows an increase of nearly $500,000 in surplus reserve, which now stands at $13,610,925, against $64,573,475 at the same time last year and $28,408,275 in 1884, while loans declined $1,388,600. The bank clearances at 30 leading points last week show a slight gain compared with last year; outside of New York, a gain of 15.3 %. The decrease in New York, equal to 2.9 %, is the first noticed for several months. The business failures for the week reported to the mercantile agencies are about the usual average, one-half of them in the Western and Pacific States. The imports of merchandise at this port during the week were $574,000 below those for the previous week, the total valuation being $7,451,682, of which $2,248,968 represents dry goods, making the aggregate since January 1 $232,483,693, as compared with $209,250,830 for the same time in 1885 and $247,137,027 in 1884.

The exports were $762,508 above those of the previous week, the total being $6,305,533, making the aggregate since January 1 $170,692,821, as against $185,058,878 for the same time last year and $172,971,561 in 1884. The items include 53,835 bushels wheat, 160,213 bushels corn, 17,145 bales cotton, 10,948,717 gallons petroleum, 5,915,626 ℔ cut meats, 2,338,182 ℔ lard.

According to the Custom-house reports the exports of specie from this port during the week were $85,682, and the imports for the same time were $137,142. Since January 1 the total exports are $42,525,614, and the imports $6,302,205.

Brown Bros. & Co., bankers, of Wall street, have bought lots on Chestnut street, Philadelphia, on which to erect a costly banking-house.

On January 1 last, according to the bank reports, $29,228,685 of the funds of savings institutions were deposited with banks and trust companies. Attorney-General O'Brien has just advised Bank Superintendent Willis S. Paine that in his opinion the law does not warrant any deposits of savings banks' funds where they are not available at a moment's notice to meet the requirements of the institution to which they belong.

A trust company of this city are making a business by guaranteeing the titles of real estate, to be used as collateral in opening credits with foreign bankers. The banker is secured against sudden depression in values, and the guarantee of title makes the property readily marketable in case the banker finds it necessary to replace his advances by selling out his collateral. It is said that other banking houses are considering favorably the transaction of business upon the same basis.

Metal Market.

Copper.—Since our last weekly report the market here has been extremely flat, no disposition being shown on the part of either consumers or speculators to invest in the metal at present. A few stray export orders are supposed to be in the market, but at such low rates as to prevent business for the moment. Lake Ingot Copper is called nominally 9¼¢ @ 10¢, and outside brands may be quoted nominally 9¢ @ 9½¢. Arizona Copper Company Pig is quoted 8½¢ and Bar 9½¢. London has again been tending downward with Chili Bars by degrees; the quotation was £38. 17/6 on the 15th, 16th and 19th; £38.15/ yesterday, and £38. 12/6 this morning; Best Selected was steady at £43. Messrs. Henry Bath, London, write under date July 1: "Rumors have been current of a combination between the principal Spanish and American mines, and more latterly among the American mines only, to limit the production, but nothing appears to have resulted, though doubtless it is the possibility of their coming to terms which has kept our Bar market so steady during the depression in other sorts of Copper."

Tin—The process of hammering the market in London has continued since our last report, and has resulted in a further break to £98, spot Straits, and £99, futures, a large business being done daily at those reduced prices. This makes London about £3 below the importing price, and as a result the shipments from the East during the first fortnight of the month have not exceeded 500 tons to England, whereas none have been directed to the United States. Here, in sympathy with London, the market has broken from 22¼¢ to 22¢ spot, at which a fair quantity has been turned over. Futures have also been lower—say from 22.20¢ @ 21.90¢ for July and August delivery, and from 22.15¢ to 21.95¢ for shipment from London. The consumptive demand has this week become very active among us, so much so that many of the dealers have been compelled to replenish their stocks from second hands, thus demonstrating that the present break in London is likely to lead to a rebound hereafter. We are in receipt of the official London statistics of visible supply in Europe and America on July 1, which show the figures at 12,002 tons, against 13,613 in 1885, the price then being £101. 10/, against £94. 10/ in 1885. At the Metal Exchange, 25 tons August delivery still sold at 21.80¢. *Tin Plates*—Have been moderately active, without change. We quote at the close, large lines, ordinary brands, per box: Charcoal Bright, $4.75 @ $5.37½; do. Ternes, $4.35 @ $4.75, and Coke Tin, $4.37½ @ $4.62½. Liverpool is steady at 15/6 @ 17/6 Charcoal, and 13/3 @ 13/6 Coke.

Lead.—An outside lot of Common Domestic peculiarly situated sold at $4.85, and 200 tons all told besides at $4.90, at which latter figure the nominal price is sustained, although Foreign, with the decline to £13 for Soft Spanish in London, can be laid down here at 4⅞¢. We quote Refined nominally $4.95; St. Louis to $4.70; Common and Chicago, $4.70 @ $4.75. We are winding up here with a very quiet market.

Spelter and Zinc.—Nothing worth recording has occurred during the week in Common Domestic Spelter, which remains steady and quiet at $4.40 @ $4.60, nominally. Bertha Refined is worth 8¢. In London Silesian Spelter is steady at £14. 2/6, and here at 4⅞¢ @ 5¢, nominally. *Sheet Zinc* has advanced, the price having been put up at the mills, and we now quote Domestic $5.70 @ $5.85, at which a fair trade is transacting.

Antimony—Has been featureless at 8¼¢ for Cookson and 8¼¢ for Hallett; the latter remains £31. 10/ in London.

New York Metal Exchange.

The following transactions are reported:

FRIDAY, July 16.

15 tons Tin, spot ..... 22.10¢

MONDAY, July 19.

10 tons Tin, August	22 ¢
5 tons Tin, August	22 ¢
10 tons Tin, August	22 ¢
10 tons Tin, August	22 ¢
5 tons Tin, August	22 ¢

TUESDAY, July 20.

5 tons Tin, July	21.95¢
10 tons Tin, August	21.95¢
35 tons Tin, spot	22 ¢

WEDNESDAY, July 21.

25 tons Tin, August ..... 21.80¢

Exports.

The following list embraces the Exports of Hardware, Machinery, Iron, Metals, &c., from the port of New York, for the week ending July 20, 1886

	Quan.	Val.
Dutch West Indies.		
Tinware, case	1	12
Mf. iron, pkgs	5	39
Hdw., cs.	2	29
Graniteware, case	1	30
Sew. ma., cs.	6	44
Clocks, cs.	9	130
Nails, kegs	11	28
Amsterdam.		
Sew. ma., cs.	102	4,592
Hdw., cs.	4	38
Mach'y, pkgs.	10	448
Hamburg.		
Hdw., pkgs.	129	2,443
Piano mat., cs	19	1,045
Ag. imp., pkgs	256	6,350
Wash. mach., cs.	18	275
Mach'y, pkgs.	4	35
Revolvers, case	1	475
Mach'y, pkgs.	15	1,815
Printing press case	1	350
Sew. ma., cs.	478	13,506
Clocks, cs.	23	364
Bremen.		
Mf. iron, pkgs	5	125
Hdw. pkgs.	5	103
Clocks, cs.	5	180
Antwerp.		
Empty drums	10	90
Hdw., pkgs.	9	178
Firearms, cs.	5	625
Pumps, pkgs.	4	580
Sew. ma., cs.	87	1,719
Zinc ore, csks	180	1,950
Danish West Indies.		
Nails, kegs.	30	79
Hdw., pkgs.	10	50
Copenhagen.		
Clocks, cs.	27	427
London.		
Ag. imp., pkgs	185	2,024
Nails, kegs	150	350
Saws, cs.	15	912
Mach'y, pkgs.	26	2,522
Tacks, case	1	75
Pistols, cs.	2	420
Primed shells, cs.	10	300
Guns, cs.	15	1,092
Hdw. pkgs.	245	7,303
Clocks, pkgs.	100	1,300
Sew. ma., cs.	108	2,063
Mf. iron, pkgs	8	235
Bullets, cs.	41	750
Iron drums	25	219
Cartridges, cs	2	37
Glasgow.		
Mf. iron, pkge	1	50
Clocks, cs.	3	37
Sew. ma., cs.	29	515
Water-wheel	1	250
Steel posts, bdls	40	100
Ag. imp., pkgs	3	33
Hdw., cs.	22	258
Hull.		
Pumps, pkgs	6	255
Clocks, pkgs.	12	275
Ag. imp., pkgs	2	50
Hdw., cs.	19	394
Arms, case	1	44
Liverpool.		
Hdw., cs.	68	1,817
Mf. steel, cs.	48	764
Mf. iron, pkgs	12	261
Pumps, pkgs.	6	160
Saws, cs.	2	85
Clocks, case	1	10
Mach'y, pkgs.	66	6,931
Ag. imp., pkgs	89	2,744
Copper, cks.	66	8,176
Guns, cs.	5	560
Boat	1	135
Copper mat'l, bags	6916	19,900
Brass goods, cs.	34	2,125
Sew. ma., cs.	109	2,622
Stamp'dware, cs.	9	425
Old metal, pgs	34	1,047
Newcastle.		
Hdw., cs.	187	2,500
British Guiana.		
Sew. ma., cs.	3	86
Nails, kegs	8	26
Ag. imp. pkgs	30	142
Hdw., cs.	31	397
Mach'y, pkge.	1	25
British West Indies.		
Tinware, cs.	23	294
Hdw., cs.	20	180
Sew. ma., cs.	12	1,435
Yellow metal, case	1	56
Anchors	18	90
Cutlery, cs.	690	178
Mf. iron, pkgs	89	277
Nails, bxs.	20	76
W. rope, coils	3	124
Clocks, cs.	6	95
Nails, kegs	17	185
British Possessions in Africa.		
Ag. imp., pkgs	488	8,094
Hdw., pkgs.	253	6,006
Clocks, case	1	61
Nails, cs.	80	221
Road scrapers pkgs.	14	83
S. rollers, cs.	3	45
Mf. iron, pkgs	19	385
Sew. ma., cs.	2	100
Wash. mach., crts.	10	90
Nails, kegs	140	340
Scales, pkgs.	39	907
Wire gds., cs.	9	94
Canada.		
Old iron, tons	182	1,019
Havre.		
Hdw., cs.	5	125
Sew. ma., cs.	24	1,185
Mf. iron, pkge	1	5
Clock	1	300
Ag. imp., pkgs	46	1,876
S. rollers, cs.	18	200
Platinum, case	1	3,500
Mach'y, pkgs.	5	720
Milan.		
Ag. imp., pkgs	7	300
Brasil.		
Hdw., cs.	58	240
Tinware, cs.	6	60
Car-wheels	64	918
Cuba.		
Iron, bars	96	124
Tacks, case	1	8
Hdw., pkgs.	122	1,867
Cutlery, cs.	65	2,006
Mf. iron, pkgs	762	4,317
Clocks, cs.	10	267
Mach'y, pkgs.	1706	64,973
S. wagons	300	2,450
Car wheels, pairs	110	1,237
Sew. ma., cs.	47	801
Scales, cs.	18	518
Spikes, kegs	80	324
Tinfoil, case	1	61
Saws, cs.	4	159
Pumps, pkgs.	8	465
Nails, kegs	425	1,122
Copper tubes, cs.	8	265
Tinware, cs.	9	297
Agl. imp., pkgs	60	1,189
Iron safes	3	120
Shoe nails, cs.	29	249
Plated ware, case	1	90
Nails, cs.	31	328
Mf. steel, pcs.	3	43
Steel rails	97	581
Forge	1	26
Boiler bottom case	1	55
Metal gds., cs	2	62
Cartridges, case	1	81
French Guiana.		
Mach'y, pkgs.	671	11,306
Mexico.		
Hdw., cs.	61	816
Mf. iron, pkgs	37	766
Water-closets pkgs.	2	51
Clocks, cs.	6	97
Ag. imp., pkgs	37	569
Sew. ma., cs.	153	2,597
Mach'y, pkgs.	17	564
Saws, case	1	76
Nails, cs.	13	104
Firearms, case	1	180
Wringers, case	1	90
Cartridges, cs	6	119
Pumps, pkgs.	13	565
Cutlery, cs.	18	657
Wheels on axles, prs.	34	647
Tacks, cs.	4	106
Boiler	1	930
Brass goods, case	1	167
Oporto.		
Windmill	1	60
Ag. imp., pkgs.	5	50
Hdw., cs.	2	25
Mf. iron, pkgs	26	231
Clocks, bxs.	100	1,616
Pltdware, cs.	4	225
San Domingo.		
Bells	3	178
Ag. imp., pkgs	5	54
Nails, cs.	3	21
Nails, kegs	20	52
Mach'y, pkgs.	2	65
Sew. ma., case	1	42
Clocks, cs.	4	31
Cutlery, cs.	2	70
Iron bars	25	228
Mf. iron, pkgs	4	20
Almeria.		
Locomotives	2	8,901
Stl wire rope, reels	2	1,434
Hdw., case	1	7
Mf. iron, pkgs	437	5,472
R. R. cars and matl., pkgs.	507	15,941
Hayti.		
Mach'y, pkgs.	3	88
Sew. ma., cs.	7	150
Mf. iron, pkgs	11	37
Hdw., pkgs.	5	96
Cutlery, case	1	14
Argentine Republic.		
Hdw., pkgs.	56	949
Ag. imp., pkgs	3027	42,931
Hoop iron, bdls.	610	1,150
Pumps, pkgs.	16	402
Revolvers, case	1	67
Mf. iron, pkgs	14	102
Mach'y, pkgs.	8	463
Clocks, cs.	66	1,608
Cutlery, cs.	16	410
Whlbarrows	15	180
W. mills, pkgs	30	595
Cartridges, cs.	2	36
Water-wheels	2	419
Venezuela.		
Iron, pkgs.	27	94
Mach'y, pkgs.	23	1,876
Tinware, cs.	9	83
Nails, kegs	40	90
Boiler	1	768
Pump	1	140
Nails, bxs.	15	140
Ag. imp., pkgs	3	160
Hdw., cs.	10	406
Scales, cs.	2	26
Mf. iron, pkgs.	509	2,551
Clocks, cs.	2	20
Iron tank	1	60
Genoa.		
Tinware, case	1	20
Clocks, cs.	7	244
Hdw., cs.	5	80
Sew. ma., cs.	25	1,224
Palermo.		
Clocks, cs.	5	315
Pumps, pkgs.	5	360
United States of Colombia.		
Mf. iron, pkgs	507	4,910
Mach'y, pkgs.	392	10,309
Cartridges, cs.	19	539
Nails, kegs	96	287
Chain, piece	1	18
Scales, cs.	41	402
Shot, bxs	2	30
Per. caps, cs.	2	115
Steel, bdls.	12	134
Iron, pkgs.	141	671
Solder, case	1	15
Copper, case	1	107
Copper goods, case	1	31
Ag. imp., pkgs.	3	36
Hdw., pkgs.	135	2,444
Cutlery, cs.	28	1,055
Sew. ma., cs.	68	1,099
Iron safes	8	448
Guns, cs.	18	1,506
Pumps, pkgs.	10	311
Tinware, cs.	51	684
Babbitt metal, box	1	12
Saws, case	1	169
Yel. met., cs.	7	401
Sandwich Islands.		
Ag. imp., pkgs	73	2,013
Tacks, cs.	10	102
Sew. ma., cs.	55	543
Mf. iron, pkgs	344	4,383
Mach'y, pkgs.	161	11,667
Hdw., pkgs.	225	3,891
Nails, cs.	39	292
Cutlery, cs.	14	912
Clocks, cs.	8	300
Scales, cs.	12	69
Iron, pkgs.	625	735
Yel. metal, cs	15	866
Car-wheels	134	569
Copper, cks.	5	712
Pumps, pkgs.	16	3,384
Car-wheels, pr	192	1,888
Nails, kegs	2730	7,011
Wringers, cs.	2	22
Babbitt metal, case	1	25
Steel, pkgs.	9	72
Y. m. nails, kegs	20	330
Pig iron, tons	20	376
Japan.		
Locks, case	1	65
Central America.		
Tinware, cs.	5	74
Mf. iron, pkgs.	814	3,894
Saws, cs.	2	125
Hdw., pkgs.	38	690
Per. caps, case	1	16
Cartridges, cs	452	7,088
Cutlery, cs.	17	387
Clocks, case	1	18
Ag. imp., pkgs	16	110
Br. goods, cs.	2	35
Sew. ma., cs.	78	1,323
Rifles, cs.	75	14,500
Mach'y, pkgs.	68	3,905
Sew. ma. oil, cs.	3	14
Scales, cs.	4	21
Iron safe	1	50
Nails, kegs	2	15
Lisbon.		
Clocks, cs.	3	46
French West Indies.		
Ag. imp., pkgs	4	80
Sew. ma., case	1	7

Trade Report.

New York.

American Pig.—The market shows little or no change so far as Foundry Irons are concerned. We hear of the closing of a few contracts for fall delivery in Lehigh and Hudson River Irons, but it is only with reluctance that furnace agents enter into them, largely to keep up long-established relations. We hear of some pressure to place some Southern Irons at New England points which can be reached by water. Standard Forge Pig is in more plentiful supply, the usual condition at this season of the year, when stoppages at mills are quite general. We hear of some weakness, and of shading on large desirable orders. We quote standard brands Foundry No. 1, $18 @ $18.50; No. 2, $17 @ $17.50, and Gray Forge, $15.75 @ $16.25. On outside brands concessions of 50¢ are usual.

Scotch Pig.—The market is quiet and steady. We quote nominally as follows for small lots: Coltness, $19.75 @ $20 to arrive; Gartsherrie, $19 @ $19.25 to arrive; Shotts and Langloan, $19.50 @ $20 to arrive; Carnbroe and Glengarnock, $18.50 @ $19 to arrive; Summerlee, $19.25 @ $19.50 to arrive; Dalmellington, $18.50 @ $18.75 to arrive; Eglinton, $17.50 @ $18 to arrive, and Clyde, $18 @ $18.50 to arrive.

Bessemer Pig.—The market is dull and lifeless for Foreign Bessemer. There is little demand for Hematites for special open-hearth purposes. We continue to quote $18 @ $18.25 for Domestic at furnace and $18.75 @ $19, nominally, for Ordinary Foreign Bessemer.

Spiegeleisen.—We hear of sales of one or two round lots of English at private terms. We continue to quote English 20 %, large lines, $25 @ $25.25, and German, $24.75 @ $25.

Bar Iron.—We are informed that the car shops, both East and West, are very busy, and that it is beginning to be a matter of some difficulty to secure early delivery. This, of course, means a heavier demand for Iron. The trade in this locality is in a fair condition, concessions being only made under exceptional circumstances. No result was reached at the recent conference between the men and the Philadelphia mills, and the strike is likely to go on. We continue to quote for delivery here in round lots: Common Iron, 1.65¢ @ 1.70¢; Medium, 1.70¢ @ 1.75¢, and Refined Iron, 1.75¢ @ 1.9¢. Store prices are 1.75¢ @ 1.80¢ for Common, 1.85¢ @ 1.90¢ for Medium, and 1.9¢ @ 2.2¢ for Refined.

Structural Iron and Steel.—The closing of the Harlem River Bridge contract last week with the Passaic Rolling Mill Company for $845,000, calls for about 8000 tons of work, one-half Iron and one-half Steel, the delivery to be spread over two years. We understand that the greater part of the raw material has been covered. We quote for Angles 2¢ @ 2.10¢, delivered, and Tees at 2.40¢ @ 2.45¢, for round lots. Steel Angles are quoted 2.35¢ @ 2.45¢, according to quality. Store quotations remain 2.25¢ @ 2.4¢ for Angles, and 2.6¢ @ 2.7¢ for Tees. American Beams and Channels are nominally 3¢ base from dock for all orders.

Plates.—We quote for round lots: Common or Tank, 2.10¢ @ 2.20¢; Refined, 2¼¢ @ 2⅓¢; Shell, 2.4¢ @ 2½¢; Flange, 3.4¢ @ 3½¢; Extra Flange, 4¢ @ 4¼¢. For small lots of Steel Plates the quotations are as follows: Tank, 2.70¢ @ 2.75¢; Ship, 3¢; Shell, 3¼¢; Flange, 3½¢, and Fire-Box, 4¢ @ 4½¢, on dock.

Merchant Steel.—We quote nominally for the range of ordinary to good grades as follows: American Tool Steels, 7½¢ @ 9¢; Tool Steel of special grades and finer qualities, 12¢ @ 20¢; English Tool, 13¢ @ 15½¢; common grades, 7¢ @ 9¢; Crucible Machinery, 3.75¢ @ 4.50¢; Round and Flat Spring, 2.3¢ @ 2.5¢; Round-Edge Tire, 2.3¢ @ 2.5¢; Square-Edge Tire, 2.60¢ @ 2.7¢; Toe Calk, 2.6¢; Sleigh Shoe, 2.5¢ @ 2.6¢; Open-Hearth Machinery, 2.4¢ @ 2.6¢, and Bessemer Machinery, 2.15¢ @ 2.25¢, with freight allowance.

Steel Wire Rods.—There have been some sales of round lots for delivery during the next few months, and there are inquiries in the market for shipment West previous to the closing of navigation. The Wire trade has been much depressed lately, and sales have been on so moderate a scale that buyers are not encouraged to buy Rods largely for future supply. On the other hand, importers anticipating a large business early in the year then made heavy contracts with German mills. Some of these have been cancelled by the payment of $1.25 a ton, but on others delivery is being made. The result is a pressure to sell in a reluctant market with the inevitable decline in price. We quote $37 @ 37.50. The lower figure is shaded when buyers are willing to assume the risk of higher duties at time of delivery, in consequence of a possible rise abroad on which valuations are based.

Steel-Wire Billets.—Foreign 4 x 4 inch Billets are competing closely with the domestic make. We quote nominally $27 50 @ $28.

Steel Rails.—We are reported only two sales of round lots, but negotiations are pending for larger blocks. The market is steady and firm at $34 @ $35, according to size of order, time of delivery, &c.

Old Rails.—We note a sale of 1000 tons of American T's to a Pennsylvania mill at $20.50, delivered, and 700 tons at private terms. Round blocks of English Rails now in store and of Southern Old Rails are freely offered without finding takers.

Scrap.—The market is dull at $18.25 @ $18.50 for No. 1 from yard. Foreign Scrap arriving is going into store.

Steel Scrap.—We hear of a sale of a few hundred tons of Foreign Bloom and Billet Ends. We quote $20 @ $20.50 for this class of material.

Rail Fastenings.—The Spike Mills have been making at the rate of over 10,000 kegs a month lately. Some of the larger mills are doing more than their allotment calls for, and are paying the smaller ones the bonus agreed upon by the combination. Concessions are occasionally made outside of freight allowances. We quote nominally 2.40¢, delivered, for Spikes, and 1.80¢ @ 2¢ for Angle Fish Bars.

Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, July 20, 1886.

Pig Iron.—There has been some little indication of an increasing demand, and on the whole the turn of events during the past 10 days has been in sellers' favor. There has been a larger business done; there is more inquiry, and as regards some grades the offerings are less urgent. The outlook to-day is certainly more encouraging, and there is a pretty general impression that things are on the mend. Consumption has been resumed in most of the large mills and foundries, and the current requirements from this time on are expected to be very large. Such being the case increasing firmness may be expected, although it is hardly likely that there will be any advance. It will be a good thing, however, to have a market at quotations which can be depended upon, something that has not been known for several weeks past. The improvement as yet is of a negative character; there is, for instance, less disposition to make concessions, and in some cases a virtual withdrawal from the market at the low prices offered by some large buyers, and Southern Irons which could have been had at $15, $16 and $17 on firm offers are now held at $1 more money, although it is quite likely that some concessions could be had, although agents report the furnaces as being so well sold up that they have nothing they care to offer at prices recently prevailing. There is no material change as regards local Irons, but they will be likely to stiffen up under the withdrawal of competiton from outside sources. A considerable amount of business has been done in Mill Irons, large blocks having been taken at about $15.25 @ $15.75 at furnace, according to location, quality of Iron, &c. There is more inquiry, too, and as we said before prospects are favorable for a pretty steady demand. Prices are steadier, and if nothing unforseen occurs we may have to quote firmer in course of a week or two. Sales have been chiefly on the basis of about $15.25 @ $15.50 at furnace for Gray Forge; $16.25 for No. 2 Foundry; and $17.25 @ $18 for No. 1 Foundry, with freights to tidewater averaging 75¢ @ $1 ℔ ton additional.

Foreign Irons.—There is some little inquiry for special brands of Bessemer, but we do not hear of any sales being made. Asking rates are $19.50 for special brands, $19 for ordinary and $25.25 for 20 % Spiegel.

Blooms.—There is a considerable inquiry for Steel Blooms and Slabs, which are offered at about the following prices: Rail Blooms, 7 x 7, $25.50; Slabs for Nail Plate, $23.50 @ $29.50 at tide for Foreign and $30 at mill for Domestic, and from that to $35 for higher qualities; special grades for Boiler Plates and other uses requiring high tensile strength, $34 @ $38. Other Blooms, ℔ ton of 2464 lb, as follows: Charcoal, $52 @ $54; Run-out Anthracite, $43 @ $44; Scrap Blooms, $33 @ $34, and Ore Blooms, $34 @ $35.

Muck Bars.—There is more inquiry, but prices are difficult to maintain, and are quoted at $28 @ $28.50, according to location of mill, quality of Bars, &c.

Bar Iron.—There is more inquiry, particularly for Car Iron, but prices are extremely low. Some of the leading mills in the vicinity quote 1.8¢ to 1.85¢ firm, with full extras; others are a tenth lower, but what the difference in quality may be is purely a matter of opinion. No great amount of business can be done at the higher figure, although those who are strict as to quality take it rather than risk their trade for a few cents per hundred on Bar Iron. The bulk of the demand, however, is on the lower priced article, which the sellers insist is equal to anything that others can make. A conference was held yesterday between the Kensington ironmasters and their workmen, but no progress was made toward a settlement. The men insist on a 2¢ base, which the masters are just as determined not to grant; as the position is in no respect different to what it was when they went out, the chances now appear to be that the strike will be a long one, as neither side seem inclined to give in.

Plate and Tank Iron.—There is a somewhat improved demand, and as a rule sellers are endeavoring to establish a higher range of quotations. Some who have made up their accounts for the first half of the year find that it is impossible to continue at the old prices without serious loss, and will either get more money or shut up their mills. This feeling is so general that slightly higher prices appear to be pretty well assured, and particularly so as the demand gives promise of steady increase. A fair amount of orders are on hand, some taken at concessions from the rates quoted herewith, but on new business prices are firm at about the following figures: Ordinary Plate, 2.05¢ @ 2.1¢, delivered; Tank, 2.1¢ @ 2.2¢; Shell, 2.5¢; Flange, 3.5¢; Fire-Box, 4.25¢; Steel Plates, Shell, 3.25¢; Flange, 3.5¢; Fire-Box, 4¢.

Structural Iron.—A better feeling prevails in this department, and with important orders under way and others within reach it is believed that the balance of the year will be one of considerable activity. In addition to large orders in hand for bridgework, and a great deal in prospect, some six or seven thousand tons is expected to be given out in a few days for an elevated railway in New York, so that the mills will all be pretty well filled up. Prices are still low, but there is a firmer feeling, and concessions not readily granted from the following quotations: 2¢ @ 2.05¢, delivered, for Angles; 2.1¢ @ 2.2¢ for Bridge Plate; 2.4¢ @ 2.5¢ for Tees, and 3¢ for Beams and Channels.

Sheet Iron.—Reports vary considerably, some as busy and report steady improvement, others dull and depressed. There is little doubt, however, that the market is better, and increasing activity probable during the next 30 or 60 days. Prices for small lots as follows:

Best Refined, Nos. 26, 27 and 28	3¾¢
Best Refined, Nos. 18 to 25	3½¢
Common, ¼¢ less than the above.	
Best Bloom Sheets, Nos. 26 to 28	4¼ @ 5 ¢
Best Bloom Sheets, Nos. 22 to 25	4¼ @ 4½¢
Best Bloom Sheets, Nos. 16 to 21	3¾ @ 4 ¢
Blue Annealed	2 6 @ 2.75¢
Best Bloom, Galvanized, discount	60 %
Common, discount	65 %

Steel Rails.—The demand is fully maintained, and large orders are still coming on the market. Some of the largest are from the Southwest, 30,000 to 40,000 tons being wanted for delivery along the Mississippi River. The mills are all running full, with more business offered for the next three months than can be by any possibility accepted. The output during the first half of the year was the largest on record, and promises to be fully maintained for a considerable time longer. Prices are firm at $35 for early deliveries and about $34.50 for winter and spring.

Old Rails.—Business is still held in abeyance because of the scarcity of suitable lots for spot delivery. For such $19.50 @ $20 would probably be paid, while bids of $19 are about the best that can be obtained for shipments during July and August. Sales have been made at interior points at $20.50 @ $21, with more demand at about the same figures.

Scrap Iron.—There is a steady feeling in Old Material, and a fair demand at about the following quotations: No. 1 Wrought Scrap, large lots, $18; selected do., $19 @ $20; No. 2 do., $13 @ $14; Turnings, $14 @ $14.50; Old Car Wheels, $15 @ $16; Old Steel Rails, $18.50 @ $20; Fish Plates, $23 @ $24; Cast Scrap, $14 @ $15; do. Turnings, $10 @ $10.50.

Wrought-Iron Pipe.—Prices are firm and unchanged, with a particularly good demand for large sizes. Discounts as follows: Lap-Welded Black, 57½ %; Butt-Welded Black, 42½ %; Butt-Welded Galvanized, 32½ %; Lap-Welded Galvanized, 40 %; Boiler Tubes, 52½ %.

Nails.—The improvement noted a week ago has been fully maintained, and prospects are favorable for a firm and steady, if not higher, range of prices. Lowest store price is $2.20 for all east of the Alleghanies.

At the meeting of the Atlantic States Nail Association, held on the 10th, Mr. W. E. S. Baker was elected secretary and treasurer. Mr. Baker has served 20 years in connection with the various Nail and Bar Iron Associations, and will, as heretofore, doubtless prove to be the right man in the right place.

Pittsburgh.

Office of *The Iron Age*, 77 Fourth Avenue, PITTSBURGH, PA., July 20, 1886.

There has been no very important change in the general business situation during the week. As noted in our last report a better feeling is gaining ground, and general business is improving. The reports from trade centers, both West and South, are of an encouragjng character. The dam in the Ohio River at Davis Island, about 5 miles below this city, has been in successful operation the greater part of the summer, and its success is now almost beyond a doubt; even a good many who opposed its construction and claimed that it would never do what was promised are now forced to admit that it is doing a great deal better than they expected. This is said to be the largest dam in the world, and the first of the kind ever built in this country. By means of this dam there are now 5½ feet of water in the harbor of Pittsburgh, whereas without the dam there would not be 1 foot. Coalmen are now enabled to get loaded Coal boats and barges out of the Monongahela River almost any time, whereas before the dam was built they were never able to do anything with their loaded Coal craft excepting when there was a freshet. The Edith Furnace, recently leased by New York and Pittsburgh parties, will, it is expected, be ready to blow in the latter part of August. It is located on the Ohio River in the lower part of Allegheny City and adjoining the site of the old United States Marine Hospital. It is understood that the Edith will be chiefly under the management of the National Tube Works, who will take a large part of its product. For a number of years past furnacemen here have been anxious to strike new Ore fields that would afford competition with those of the Lake Superior region; this they think has been realized in the opening up of the new fields of Minnesota. The Ores are said to be equal to those of the Lake Superior region, and it is expected will force the price of the latter down to a more reasonable figure. The Ore companies of the latter region have to a certain extent had a kind of monopoly of the Pittsburgh make for a number of years, much of the time, as is the case at present, exacting a price for Ore out of all proportion with that being realized for the product. It is true the distance to the Minnesota mines is somewhat greater from Pittsburgh than to those of Lake Superior, but the cost of transportation is about the same.

Pig Iron.—While consumption continues large, the market is dull. The demand the past week was a little better than that of the week preceding, but the inquiry is still chiefly for small lots, consumers generally not being disposed to anticipate future wants. Some well-informed operators look for a stiffer market when the fall trade fairly opens up for Finished Iron, which, it is expected, will be better than it was a year ago; but whether it will be of such a character as to enable manufacturers to realize better prices, so that they can afford to pay more for Pig Irons, is a matter that time alone will develop. While Ores are higher relatively than Pig Iron, it is also true that Pig Iron is higher relatively than Finished Iron, hence there is a deal of complaining all along the line. Prices remain unchanged, but buyers still have the advantage, and it is hardly necessary to state that they do not hesitate to make use of it. Within the past month or six weeks there has been a decline of from 50¢ to 75¢ ℔ ton, with no reduction whatever in the cost of production, and this being the case it is not strange that furnacemen are wanting cheaper Ores and cheaper freights. We quote as follows:

Neutral Gray Forge	$15.75 @	$16.25,	4 mos.
All-Ore Mill	17.00 @	17.50,	4 "
White and Mottled	14.75 @	15.25,	4 "
No. 1 Foundry	18.00 @	18.50,	4 "
No. 2 Foundry	17.00 @	17.50,	4 "
All-Ore Foundry	19.00 @	19.50,	4 "
Charcoal Foundry	20.00 @	23.00,	4 "
Cold Blast Charcoal	24.00 @	27.00,	4 "
Bessemer Iron	18.25 @	18.50,	4 "

Muck Bar.—There is not much doing; at least we hear of but few sales having been made. Prices may be quoted nominally at $27 @ $27.50, cash, as to quality, delivery, &c.

Manufactured Iron.—There is a continued fair degree of activity; orders continue to come forward pretty freely, and, while they are mostly small, there is an increasing volume of business in the aggregate. The indications for a good fall trade are encouraging, and, while prices are unsatisfactory, a better feeling obtains among manufacturers, who are in hopes of being able to realize better prices before long. We continue to quote prices on a basis of 1.65¢ @ 1.70¢ for Bars, first quality Iron, and 1/10¢ @ 2/10¢ less for Old Rail Iron, which, it is said, has been offered as low as 1 45¢ @ 1.50¢, delivered at Chicago. Some of our mills continue to work almost entirely on Skelp Iron, which is still quoted at 1.75¢ @ 1.80¢. There is not the demand for Structural Iron that there was a year ago, but Bridge Iron is in good demand. It is expected that makers of Agricultural Implements will commence to order pretty freely within the next few weeks.

Nails.—There is a very fair business for the season, and the outlook is promising for a good fall trade; prices remain unchanged at $1.90, 60 days, 2 % off for cash, for Iron in carlots and upward, and 10¢ @ 15¢ additional for Steel. Owing to the protracted suspension manufacturers had no stock, and it will require some time for them to work up an assorted supply; until they do so they will be unable to fill orders. The regular monthly meeting of the Western Nail Association took place in this city last week, but there was nothing done of any importance to the public.

Wrought-Iron Pipe.—There appears to be no abatement in the demand. Mills are all busy, and likely to continue so until the close of the year. Natural-gas companies are burying thousands of tons of Pipe in the ground, and the requirements of oil companies are also considerable. The demands of the former are not likely to fall off much until every street and alley in these two cities and suburbs are supplied with natural gas. Prices firm, but unchanged. Discount on Black Butt-Welded Pipe, in carlots and upward, 45 %; Black Galvanized, 35 %; Black Lap-Welded 60 %; Galvanized do. 42½ %; less than a carload, discount 2½ % less than rates above quoted. Boiler Tubes, 52½ %; Oil-Well Casing, 45 ¢ ℔ foot, net; 2-inch Oil-Well Tubing 14 ¢; 8-inch Drive-Pipe, $1.30.

Steel.—The general features of this interest remain much the same as noted for some time past; there is a continued fair degree of activity, but no change in prices. Bessemer Blooms and Billets are still quoted at from $30 to $31, although a sale of Billets is reported as having been made as low as $29.50. Nail Slabs are still quoted at $29 @ $30; Crop and Bloom Ends may be quoted nominally in the absence of sales at $20 @ $21.

Old Rails.—There is some inquiry for Old Iron Nails in small lots for immediate delivery, and we can report sales at $21.25. Old Steel Rails are still quoted at $20 @ $20.50 for short and $22 @ $22.50 for long lengths. There are but few lots of Iron Rails offering, especially for immediate delivery, and the market is firmor. Nearly all the mills in the Shenango and Mahoning valleys are using more or less Old Rails.

Steel Rails.—The mills here, as elsewhere, are unable to take orders for delivery this side of October; some mills are said to be sold close up until the close of the year. We hear of offers, however, to sell for October and later at $36, cash, at mill, which may be regarded as the ruling price. The Homestead is making little else than Rails.

Chicago.

Office of *The Iron Age*, 36 and 38 Clark St., Cor. Lake St., CHICAGO, July 19, 1886.

Hardware.—Nothing of importance to note. Trade is of the usual midsummer character, there being no urgent demand for any line of goods. Country dealers are looking somewhat after fall lines and making inquiries regarding prices on specialties. Manufacturers are more active in seeking orders for fall goods among the jobbing trade, and from prices quoted there is every indication that there will be unusual firmness in selling figures.

Barb Wire.—While there is very little demand and scarcely any sales are made except in small lots, the market is nevertheless badly demoralized in price. Jobbers continue to make a nominal quotation of 3½¢ for Painted Wire and 4¼¢ for Galvanized from store. These prices, however, are not adhered to, and sales are made at 3.35¢ for Painted and 4.10¢ for Galvanized by dealers on competitive orders. It is said that manufacturers have shaded these figures in carload lots to a point only a trifle above the actual cost of manufacture. Stocks in the hands of manufacturers are quite large. Many of them are seeking to obtain orders for fall delivery. At a meeting of the manufacturers on Thursday last the association which has been in existence since last spring was virtually disbanded and a new organization formed, which is to be known as the United Wire Company, whose operations shall be controlled on a pool basis similar to that governing the Sheet Lead and Lead Pipe Association to which we have heretofore referred. Mr. F. B. Lawrence of the latter association was elected secretary, treasurer and general manager of the new Wire Company, *vice* C. O. Collins resigned, and Mr. E. J. Marsh president. We are informed that the last agreement signed by makers will be *nil* and a new one promulgated which will be more binding. It is understood that the preliminary work will require from four to six weeks, and, allowing that additional time will be necessary to secure the co operation of those not now interested, it will be well on towards the holidays before the organization is perfected in all its details. The purpose of the new company is to control the output and regulate prices, and is to include all makers of Fence Wire in the United States. The company under this management will comprise many discordant elements that will not be adjusted in time to have much effect upon prices for fall trade.

Nails.—The demand continues to be very fair considering the season. Prices are held with greater unanimity than usual during a dull period, and the quotation of $2.10 for Iron Nails and $2.20 for Steel Nails by jobbers in small lots is very generally adhered to. Carload lots are quoted at 5¢ ℔ keg off the above prices. Quite a great many inquiries are received from country merchants for carload orders to be delivered later in the season, which are declined by all jobbers and accepted by only a few of the Western makers. The disagreement between the Nailers and Feeders at the Bay View Mill has been adjusted, and the works, which have been idle since the first of the month, started up on Saturday last. They have a capacity of about 1200 kegs a day, which for the present will be divided about equally on Iron and Steel Nails. Manufacturers' price from mill in carload lots is quoted at $2.05 for Iron Nails and $2.15 for Steel Nails. We now and then hear of some concern that is willing to shade these figures on limited quantities. The general tendency of the trade, however, is to Steel Nails and firmness in above quotations.

American Pig Iron.—All information that can be obtained regarding the market is merely corroborative of reports made during the last three weeks. The demand continues to increase from week to week from all classes of consumers. During the past week the demand for carloads was more than usually active, while the negotiations on large blocks referred to last week in some cases have been closed and new ones developed. In addition to the Harvesting Machine men who are about closing contracts for their year's supply, there comes an increased demand from Car-Wheel and Malleable-Iron manufacturers. The aggregate number of Freight Cars said to have been placed during the past week numbers about 5000, the majority of which have been placed with manufacturers contiguous to this market. Furnacemen foresee the great

demand that they will surely have for Pig Iron, and are consequently somewhat independent in their quotations. On carload lots of Lake Superior Charcoal $20 @ $20 50 continues to be a ruling price, but how much these figures have been shaded on the large blocks placed during the week is not definitely known. It is certain, however, that on some of the choice brands the top price could not be reduced over $1 ℔ ton. There are others, however, on which buyers could do better, because the quality of Iron is less valuable. During the present week some of the heaviest buyers will place their orders, and the market will probably receive a shock at some of the figures made. But notwithstanding the low prices that are anticipated when these sales are completed the market must necessarily be firmer than before, for the reason that the contracts under negotiation will absorb all the surplus Iron and include many of those that are less saleable for general uses. The placing of these large contracts is looked upon as a benefit to the market at this time, and does not alarm furnacemen or sales agents regarding the future of the trade. While the principal trading for the week was in the above class of Iron, there was also a good demand for Coke Irons in small lots at $19 @ $19.50. No changes are announced on Cinder Mixed Irons, which are quoted at $18. Ohio Standard Blackbands have been in strong request, and on several large orders the carload prices, $20 @ $20.50, were shaded 50¢ @ $1 ℔ ton on some grades. The greatest weakness in the market is found in the grades of Southern Iron. The great quantity of this Iron that is constantly in the market places the advantage on the buyers' side and makes competitors warm antagonists in securing orders As a normal price we continue to quote No. 1 Foundry at $17.50; No. 2, $17; No. 2½, $16 @ $16 50, and No. 3, $15.50; but the price is only applicable to small lots. Recent sales of some of the best brands of Southern Iron on lots of 2000 to 3000 tons would shade these prices from $1 to $1.50 per ton, according to grade. It seems almost impossible for any one of the furnaces to sell at a figure so low that his competitor will not undersell him. On a recent sale made at remarkably low figures the manufacturer refused to fill the contract. The buyer willingly canceled the order, as he could obtain an equivalent grade at less money. The worst feature in connection with this market is competition of other grades of Iron with Southern brands. There appears to be a constant necessity among Southern furnacemen to realize on their output, which forces sales agents of Charcoal, Coke and Ohio Irons to meet prices if they wish to retain their proportion of Iron in the mixture of the different manufactures of finished articles. Were Southern furnacemen strong enough to hold out for higher figures a limited period the market would quickly react in their favor and greatly improve the general tone of transactions on all other classes of grade Iron.

Merchant Steel.—There is some improvement noted in the demand from city trade for Merchant Bars. Inquiries for later deliveries are coming in more freely, and specifications from a portion of the Agricultural Implement makers have been sent out. It is said that they are asking prices on about the same quantity of Steel that they have been buying for several years past, and the weak and irregular condition of prices, and the anxiety on the part of manufacturers to obtain orders, proclaim large concessions on the ordinary grades of material. On specialties manufacturers are demanding higher figures for the present trade and are receiving a fair proportion of orders. We renew the following quotations: Tool Steel, 7½¢ @ 8¢, ordinary grades; Specials, 9¢ @ 13¢; Flat Crucible Machinery Steel, best grades, 5½¢; Round machinery, 3¢; Open-Hearth and Bessemer, 2½¢; Plow Steels, base price, 5¢.

Steel Rails.—Considerable inquiry is reported for late fall and next spring delivery. So far as can be learned negotiations for next year delivery are not entertained, and mills are not in a position to accept much of the trade offering for early fall delivery. Prices continue to rule at $38 for first quality and $34.50 for seconds.

Structural Iron.—There has been something more than the usual demand for Beams during the past week in small lots. Quite a number of large buildings are in contemplation in different parts of the country upon which estimates have been asked. Foundrymen for the present are well employed on structural shapes, and anticipate enough work to keep them running full until late in the fall.

Bar Iron.—Trading in the best grades is fully up to expectations for this season of the year. The largest demand is for small lots from the jobbing trade, with an occasional round-lot order from country merchants, who are stocking up for fall and winter trade. Low freight rates in some sections are the inducements, while others look upon present prices as being bottom. On Best Refined New Puddled Iron we quote 1.85¢ @ 1.90¢ from store and 1.70¢ @ 1.75¢ from mill, according to specifications. Common Iron from Old-Rail stock is quoted from store at 1.75¢ rates and 1.55¢ @ 1.60¢ from mill. Prices on the latter grade of Iron are very irregular, and made according to the circumstances of the seller, quantity and buyer. Specifications for large lots of Iron for Car-building have been distributed among makers, which are exciting considerable competition. Manufacturers of Harvesting Machines are also notifying sellers that they are in the market, and prices for last year are likely to be duplicated on many of the orders.

Black Sheets.—There is quite a fair demand in small lots for the better quality of Iron, and an improvement in the demand from heavy consumers. Jobbers are not inclined to buy heavily as yet, and refuse to sell far in advance of time of delivery. On quotations obtained from mill for September delivery it is said that makers have advanced the price about $1 ℔ ton. Jobbers report a better demand for Light Sheets and quote on Ordinary Grades from store, 2.70¢ for No. 24; 2.80¢ for Nos. 25 and 26, and 2.90¢ for No. 27 to the best class of buyers.

Galvanized Iron.—Sales agents report that they are having a slightly better demand from the jobbing trade in large lots. It is said that the Cornice trade has slightly improved recently, and the demand from heavy buyers is better than several weeks ago. On inquiries from furnacemen some weakness is reported, and it is possible that concessions will be made on present prices for large lots. We renew quotations of 60 and 10% off on Juniata and 60, 10 and 5% off on Charcoal as jobbers price from store. Some of the manufacturers of the best grades claim that this is a less price than they can afford to sell the Iron for from mill.

Old Rails.—The quantity offering is quite large, and buyers are not taking hold very readily. The North Chicago Rolling Mill Company are quoting $19, Milwaukee delivery. Holders still ask higher prices, and are unwilling to accept the figure named except where selling is an actual necessity or part of a trade on new material.

Old Wheels.—There is a fairly good demand at present from Wheel-makers, who are offering $15 cash in round lots. Large holders decline to sell at this figure, which greatly limits the number of transactions possible at price named.

Scrap Iron.—There has been a slight improvement in the demand for No. 1 Wrought Scrap during the week, which is quoted at $17.50. Quotations on Mill are $14.50 for No. 1 and $9 for No. 2. There has been quite an active demand for Cast Scrap, and some 500 tons have changed hands in the last 10 days at $15 ℔ gross ton.

Birmingham.

BIRMINGHAM, ALA., July 19, 1886.

Except in this city and within the circle of its influences business seems to be falling off all over the State. Some lines report sales almost unprecedentedly light for the season. The outlook for the agricultural staples, although certainly much better than it was two weeks ago, is still bad enough to depress trade. The unwonted industrial activity in and around Birmingham keeps business up pretty comfortably here. Railroad contractors contribute more and more to the prosperity of the merchants of the city, large new outfits having just commenced work on the Kansas City road. Before long, it seems, too, there will be another line under construction and buying supplies. The newspapers contain the advertisements required by law for a corporate organization to build the fifty-odd miles of road from Goodwater which are needed to bring the Central of Georgia system into Birmingham, and the management of that system announce that work will begin just as soon as it can decide between several routes now being surveyed. This will make four railroads building to or from Birmingham, and give it about the most desirable new trunk line it could have.

Pig Iron.—The confidence all over the country in regard to the business of the fall and winter seems to have taken firm hold of the Iron trade. The outlook for Pig Iron is certainly better than it has been since early spring, and actual business is proportionately improved Inquiries are more frequent and more imperative from all quarters. The Western markets all now exhibiting the active disposition that seems to have been in control in the East for several weeks. On the whole prices are a shade better, too, than they were a week ago even. In one case, a few days ago, No. 1 Mill of a favorite brand was sold to go to an Eastern city at a price netting within a few cents of $12.50, cash, at the furnace. This price is exceptional, unquestionably, but not conspicuously so when compared with the figures of other transactions in all grades as it would have been a very short while ago. Compared with the prices of some three months ago it shows abundant room for improvement. The same grade of Iron is leaving here daily at a higher figure under contracts made in the spring. Some small business has been done with Pittsburgh in the last few days again. As an indication of the more confident feeling among buyers it may be worthy of mention that a new furnace company which will hardly be ready to make Iron for six week yet is already receiving offers for its product.

Cast Pipe—Does not seem to sell altogether as briskly as it did a while back, though there is still a demand that ought to bring new works to a place as well situated for manufacturing as Birmingham is. Prices, although irregular, still keep close to the averages of the last six months, ranging from $27 to $30 according to size, from 8 to 3 inches.

Nails—Are down to $2.15 at Brierfield, the only place where they are made in the State just now. Those on the market here come mostly from the East.

Miscellaneous.—The small manufacturing enterprises and foundries and shops here could hardly accommodate more business than they have now. Nearly all of them are behind their orders. For urgent business depending upon the foundries the troubles have been aggravated for the last 10 days by the shut-down of the Linn Iron Works Foundry, the largest in the city, caused by the molders strike. The latter is now at an end and the men are returning to work to-day.

Iron Ore.—Ores of good quality find easy sale, and lands from which they can be dug are in demand. Several tracts of considerable size and value near this city have changed hands lately. Arrangements are in progress for several new openings of some importance.

Fuels—Are in fair demand for immediate delivery, as well as the fall trade. In the last few days some good-sized contracts have been made in Steaming Coal for immediate use. Trade in domestic Coals has hardly taken definite shape yet, some of the leading operators being accidentally kept out of the market later than usual. The demand is good, though. In Coke the demand is almost uncomfortably close to the supply, and a positive scarcity before the completion of new ovens under way is threatened.

Chattanooga.

Office of *The Iron Age*, Carter and Ninth Sts., CHATTANOOGA, July 19, 1886.

The general course of business presents nothing new of interest. In manufacturing lines there is the usual steady demand, which may be said to be on the increase in consequence of the many new enterprises and the railroads that are being constructed. The Lumber business continues active all over the South, and is now looked upon as a steady and important article of Southern commerce. Reports from the crop regions are quite discouraging, in consequence of the heavy June and early July rains, but the weather appears now to have become settled, and farmers are making the most of the time in bringing their crops forward as fast as possible. Accommodations at the banks are getting to be more easily obtained, and the rates of discounts are gradually growing less. There are rumors of new furnace plants, and the available ground for their location is being very generally looked over and discussed. The construction of new lines of railroads is opening up many very favorable locations for the manufacture of Pig Iron, and the survey of any new line is immediately followed by investments in real estate, especially if the line passes through or near Coal or Iron lands.

Pig Iron.—The course that the Iron market is taking is a matter of some little surprise. Such has been the number of inquiries and actual demand that there is a feeling of firmness that a few weeks ago was not anticipated by the producers; contracts for large amounts are not looked upon with favor by the producers unless full prices are offered. Some furnaces are in a condition to decline all overtures excepting for next year's delivery. Shipments to the Eastern States are at the present time larger than ever before; the average for the last four weeks will be about 6000 tons.

Miscellaneous.—It was stated some time since in the columns of *The Iron Age* that the Roane Iron Company had decided to enter the field of steel-making; we have now to note that they have commenced operations by putting about 100 men at work in cleaning up their works, digging foundations and preparing for the putting down of their new machinery as fast as it arrives. It is the intention of the company to have everything as complete and perfect as money and the ripest experience can command. Most of the machinery has been contracted for, and it is the intention of the management to be in full operation early in the coming year.

Cincinnati.

JULY 19, 1886.

Pig Iron.—The market remains without animation, and demand is reported by dealers to be confined mostly to supply of immediate wants. Inquiry for later supply continues as before, and some orders have been placed for round lots for delivery through this year at some concessions in prices on present quotations. Consulting the principal dealers here, the outlook on the market is thought to be encouraging for a larger consumption than this time last year without serious reduction in prices. Communications in this office from producers of all classes of Pig Irons in Virginia, Kentucky, Tennessee, Alabama, Georgia, Ohio, Michigan and West Pennsylvania corroborate the above review of the situation. Quotations for the past week f.o.b. here, or less the freight to Cincinnati when orders are for shipment direct from furnaces:

Charcoal Foundry.	
Hanging Rock, Best, No. 1, 4 mos.	$21.00 @ .....
Hanging Rock, Good, No. 1, 4 mos.	20.00 @ .....
Hanging Rock, Good, No. 2, 4 mos.	18.00 @ 19.00
Southern No. 1, 4 mos.	17.50 @ 18.50
Southern No. 2, 4 mos.	16.50 @ 17.50
Coke Foundry.	
Ohio and West Pennsylvania, No. 1, 4 mos.	18.00 @ 20.00
Ohio and West Pennsylvania, No. 2, 4 mos.	17.00 @ 18.00
Southern—Virginia, Tennessee, Alabama and Georgia, No. 1, 4 mos.	16.50 @ 17.50
Southern—Virginia, Tennessee, Alabama and Georgia, No. 2, 4 mos.	16.00 @ 16.50
Close Foundry and Mill grades	14.00 @ 15.00
Silver-Gray Softeners.	
Ohio Stonecoal, No. 1, 4 mos.	17.00 @ 18.00
Ohio Stonecoal, No. 2, 4 mos.	16.00 @ 17.00
Ohio Stonecoal, No. 3, 4 mos.	15.00 @ 16.00
Car-Wheel.	
Southern Warm-Blast Char'l, cash	17.00 @ 18.00
Southern Standard Warm-Blast Charcoal, 4 mos.	23.00 @ 24.00
Hanging Rock, Warm-Blast Charcoal, 4 mos.	19.00 @ 20.00
Hanging Rock, Cold-Blast Charcoal, 4 mos.	25.00 @ 26.00
Southern Cold-Blast Charcoal, 4 mos.	24.00 @ .....
Maryland and Virginia	27.00 @ 29.00
Forge.	
Southern Coke, Neutral, cash	14.00 @ 14.50
Southern Coke, Cold-Short, 4 mos.	13.50 @ 14.00
Southern Coke, low grades, cash	13.00 @ 14.00
Other makes, various grades, cash.	15.00 @ 17.00
Scrap.	
Rails	20.00 @ 20.50
Wheels	16.50 @ 17.00
Wrought, for range of grades, ℔ 100 ℔	.50 @ .85
Cast, for range of grades, ℔ 100 ℔.	.35 @ .60

Customary discount, 40¢ @ 50¢ ℔ ton for cash from time prices.

Louisville.

W. B. BELKNAP & CO., Louisville, write as follows, under date of July 19: Despite some untoward features in the way of local storms, droughts, &c., trade shows unmistakable signs of improvement. The volume is gradually increasing and orders are more frequent. It is only natural that it should be so at this time of the year. In certain sections, however, where agricultural interests have not prospered collections are behindhand and jobbers generally averse to extending lines of credit.

Bar Iron—Is steady, with fair demand. There is nothing lively in sight, but manufacturers are bent on obtaining present prices, and seem disinclined to offer concessions that amount to anything.

Hoops and Bands—Are still extremely low and seem destined to remain so. Many of the mills which made these a specialty have lately gone into other Irons, mainly the guide-mill sizes.

Sheet—Is stuck at early summer prices. Any marked advance seems unlikely; at the same time there are no signs of weakness.

Steel.—The lower grades of Steel are holding their own well at what are known as combination prices, but still there seems to be no disposition to go below them on the part of manufacturers, no matter how independent they claim to be. Cast Steel of various kinds, however, is offered at extremely low figures, but the makers of well-established brands declare that the lower prices are only a measure of inferiority, that the cheap so-called "Tool" or Cast Steel does not run uniform, and will not prove satisfactory to the careful user.

Nails—Are not overplentiful, and immediate deliveries of assorted lots of any magnitude are difficult to secure. The demand is not strong enough to make much of an advance in prices, but to run stocks both in the hands of merchants and manufacturers to a very low ebb.

Wire—Is comparatively dull. Some small lots are selling as the farmers harvest their crops, but here again the general demand is too light to brag on. Better things are promised for the fall, but an advance is never so easy to make as a decline, and it will be with extreme difficulty that ground once lost is regained.

Detroit.

CHARLES HIMROD & CO., dealers in Pig Iron, Detroit, Mich., report, under date of July 19, as follows: The speculative element in the market has been very noticeable during the past week. Several inquiries have been made for large amounts from outside sources, and this coupled with other things confirms the idea that the lowest price must have been reached. It is obvious to-day that manufacturers will not continue business at a loss, having the last year or two's experience to guide them. There cannot be a mistake in buying, and the furnaces in a measure realize this, and seem loth to place more than their present product at existing rates, and each one is trying to shorten deliveries on contracts as far as possible. While there has been no advances in price, a noticeable stiffness can be observed. Some inquiries for Old Material have been made, but no transactions occurred here. We should say the market fairly quotable to-day as follows:

Lake Superior Charcoal, all numbers	$21.50 @ $22.50
Lake Superior Coke, All Ore	20.00 @ 21.00
Lake Superior Coke, Cinder Mixed.	18.00 @ 19.00
Standard Ohio Blackband	20.00 @ 21.00
Southern No. 2	17.00 @ 17.50
Southern Silvery, Open	17.00 @ 17.50
Southern Silvery, Close	16.50 @ 17.00
Jackson County, Ohio Silvery	18.00 @ 19.00
American Old Iron Rails	20.00 @ 21.00
Old Wheels	16.50 @ 17.50

Baltimore.

W. N. WYETH, Iron and Steel merchant, 46 and 48 South Charles street, reports us the following, under date of July 19: Since our last report the situation has somewhat changed for the better, mainly, attributable to two causes—the suspension of operation of the Philadelphia mills, arising from the action of their men and the nearly exhausted condition of stocks on hand. The combining of these two facts has stimulated inquiry and repletion of supplies, with an improved outlook. We revise prices as follows:

Ref. Bar Iron, 1 to 6 x ⅜ to 1	℔ ℔ 1.80 @ 2 ¢
" " 1 to 4½ x 1½ to 1	℔ ℔ 1.80 @ 2 ¢
" " ¾ to 2, Round and Square	℔ ℔ 1.80 @ 2 ¢
Hoop Iron, 1½ wide and upward	℔ ℔ 2¼ @ 2½ ¢
Band Iron, from 1½ to 6 in. wide	" 2.30 @ 2½ ¢
Horse Shoe Iron	" @ 3.85 ¢
Norway Nail Rods	" 5 @ 5¼ ¢
Black Diamond Cast Steel	" 9 @ 10 ¢
Machinery Steel	" 3½ @ 4½ ¢
Spring Steel	" 3¾ @ 4 ¢
Common Horse Nails	" 8 @ 9 ¢
Railroad Spikes, 5½ x 9-16	" 2.30 @ 2½ ¢
Perkins's Horse Shoes, ℔ keg of 100 ℔	$3.85
" Mule Shoes	4.85
Boiler Tubes	50½ % off list

St. Louis.

ROGERS, BROWN & CO., St. Louis, W. H. SHIELDS, manager, report, under date of July 19: There is considerable inquiry and everything points to a large business this fall. Prices are very low and irregular. The machine shops and car works are flooded with inquiries as well as orders. One of the roads here let an order for 500 cars a short time since, and the Missouri Pacific let an order Monday last for 500 box and 300 freight cars.

Charcoal Foundry.	
Missouri	$16.00 @ $17.00
Southern	17.00 @ 18.00
Coal and Coke Foundry.	
Southern, No. 1	16.50 @ 17.50
Southern, No. 2	16.00 @ 16.50
Ohio Softeners	17.00 @ 20.00
Mill Iron.	
Missouri	15.50 @ 16.00
Southern	14.00 @ 15.50
Car-Wheel and Malleable Irons.	
Southern	20.00 @ 25.00
Lake Superior	21.00 @ 23.00
Scrap, &c.	
Old Wheels	16.00 @ 16 25
Connellsville Coke (Frick's)	@ 5.65

Imports.

The following were the Imports of Hardware, Iron, Steel and Metals into the Port of New York for the week ending July 21, 1886:

Hardware.

Alexandre F. & Sons, Rivets, barrel, 1 Cases, 4
Boker Hermann & Co. Cases, 6
Barbour Bros. & Co. Mach'y, pkgs., 19
Cortis R. J. Case, 1
Dieckerhoff, Raffiaer & Co. Cases, 2 Pins, cs., 16
Drexel, Morgan & Co. Arms, cs., 15
Dreyfus, Weiller & Co. Cases, 2
Field Alfred & Co. Cases, 2 Cask, 1 Guns, cs., 9
Gerdon Otto, Bundles, 196 Bales, 9
Hartley & Graham, Guns, cs., 4 Mdse., cs., 3
Kayser Julius Mach'y, cs., 4
Kuhe E. S. Mach'y, cs., 36
Lau J. H. & Co. Arms, case, 1
Lennard S. & Sons, Mach'y, case, 1
Montgomery & Co. Magnets, cask, 1
Moore's Sons, J. P. Guns, cs., 7
Navy Yard, Guns, &c., 7
Pringle & Borce, Mach'y, cs., 2
Rose L. P. Mach'y, case, 1
Schoverling, Daly & Gales, Cases, 36 Sundries, pkgs., 5
Sellers W. B. Mdse., case, 1
Taylor Thos. Mdse., cs., 4
Vahlen Aug. Mach'y, pkge., 1
Ward Jas. E. & Co. Case, 1
Wiebusch & Hilger, Cases, 50 Anvils, 184
Witte John G. & Bro. Guns, cs., 24 Cutlery, cs., 14
Zoller Chas. Mach'y, pkgs., 2
Order, Scale pans, 290 Mach'y, cs., 73 Ironware, cs., 6 Cases, 32 Mach'y, pkgs. and pcs., 11 Mach'y, pkgs., 139

Iron.

Baring Bros. & Co. Wire rods, coils, 334 Rivet wire rods, coils, 504 Bars, 14,349 Bundles, 305
Brown Bros. & Co. Girders, 120 Rivet wire rods, coils, 1614 Iron, coils, 2029 Iron, bdls., 600
Cary & Moen, Rods, bdls., 287
Coddington T. B. & Co. Sheets, bdls., 544 Sheets, bxs., 16
Cortis R. J. Wire rope, coils, 2
Crocker Bros. Pig, tons, 280 Spiegel, lot, 1 Spiegel, tons, 91⅛ Ore, tons, 2221
Foley E. Pig, tons, 101
German Bank of London, Ore, tons, 1130
Line & Lawrence, Tubes, bxs., 4
Mason John W. & Co. Wire rope, coils, 4
Mer. Disp. Co. Wire, bdls., 30
Naylor & Co. Coils, 1532 Bundles, 763 Bars, 5205
Nash David, Iron drums, 4
Plock & Co. Rivet wire rods, coils, 1057 Bars, 10,426 Bundles, 24
Order, Coiled rods, bdls., 554 Spiegel, tons, 500 Old rails, pcs., 1546 Pig, tons, 4600 Rail ends, tons, 300 Wrought pipes, 9 Coiled wire, cks., 12 Scrap, tons, 171 Ore, tons, 750

Steel.

Abbott Jere & Co. Cases, 22 Bars, 4 Bundles, 2
Boker Carl F. Pkgs., 7
Elgin Nat. Watch Co. Wire, cs., 6
German Bank of London, Hoops, bdls., 9450
Lazard Freres & Co. Cases, 7 Packages, 2
Lundberg Gust. Bars, 1262
Mayer, Strouse & Co. Casks, 35
Morton, Bliss & Co. Sheets, 36
Naylor & Co. Blooms, 1898
Order, Bloom ends, t'ns, 186 Crop ends, tons, 13 Tubes, 100 Tubes, cs., 4 Packages, 19 Axle, 1 Rods, bdls., 7339 Tires, 138 Billets, 1181 Bars, 55 Strips, cks., 33 Plates, box, 1

Metals.

Alexandre F. & Sons, Copper, cs, 3 Copper, sheets, 15
Bruce & Cook, Tin plates, bxs., 190 Black plts, bxs., 168
Central Stamping Co. Tin plates, bxs., 2705
DeMilt H. R. & Co. Tin plates, bxs., 890
Gould R. S. Brasswork, cs., 6
Hense, Bruckman & Co. Cartridges, case, 1
Lockitt C. H. Metal, bags, 100
Mersick & Co. C. S. Tin plates, bxs., 220
Moore's Sons, J. P. Shot and wads, cs., 6
Phelps, Dodge & Co. Tin plates, bxs., 23,888 Reg. antimony, cks., 57
Reid John, Tubs, baths, &c., pkgs., 87
Schoverling, Daly & Gales, Gun caps, cs., 6
Central Stamping Co. Tin plates, bxs., 550
Order, Lead, pigs, 3975 Tin plates and taggers, bxs., 687 Tin plates, bxs. 26,455 Tin, ingots, 1400 Tin, bbls., 5 Bismuth, cs., 7 Bismuth, bbls., 2 Quicksilver, bottles, 250 Tin slabs, 4261

The imports of Hardware, Metals and Cutlery at this port, for the week ending July 16, were as follows:

	Quantity.	Value.
Brass goods	28	$3,041
Bronzes	15	1,401
Chain and anchors	27	1,247
Clocks	27	2,778
Cutlery	98	29,677
Dutch metal	9	2,449
Electrotypes	26	846
Guns	122	17,190
Gun wads	19	2,098
Hardware	15	2,515
Iron, pig, tons	4,988	50,7.6
Iron, sheet, tons	17	1,32.
Iron, spiegel, tons	1,261	32,858
Iron, tubes	252	178
Iron, other, tons	276	6,140
Lead, pigs	1,600	6,102
Machinery	170	12,400
Metal goods	309	23,755
Needles	27	4,966
Nickel	9	8,009
Old metal	....	45
Platina	1	5,303
Plated-ware	15	799
Percussion caps	40	5,718
Pins	10	708
Plumbago	411	3,253
Regulus antimony	134	6,096
Saddlery	7	548
Steel	28,844	45,922
Type metal	....	3,925
Tin plates, bxs	58,283	238,487
Tin, slabs; 705,420 ℔	6,519	158,789
Wire	101	2,276
Zinc oxide	101	890

Trade Report.

General Hardware.

Trade continues small, but there is a good feeling as to the future. In many lines of goods the tone of the market is decidedly better than it has been, and the changes in prices show an upward tendency. Crop reports, while by no means uniformly good, are considered on the whole encouraging.

On Thursday last the expected action in Nails, an advance to $2.20 from store, was taken, and since then the market has been quiet, but steady. As is usual after an announcement of such a character, buyers are quite generally holding off, while sellers maintain a firm attitude. With some of the mills well sold up, others partly idle and not a few closed down entirely, a deadlock may be the principal feature of the market for weeks. We quote $2.20 from store, and $2 10 from dock.

The market for Barb Wire is quiet, with a fair amount of business for the season at unchanged prices.

The Axe manufacturers held a meeting last week at Saratoga, but nothing is known yet of their action, if any was taken.

The manufacturers of Scythes, at a meeting last week, reaffirmed present prices without taking any other action. It is hoped the trade will be in a better condition next season than last, as it will be free from the demoralizing influence of large quantities of goods bought at low prices before the combination went into effect.

The manufacturers of Machine Bolts and Coach and Lag Screws are all endeavoring to advance prices, and the market is in consequence much firmer than it was. There is no such movement in the case of Carriage Bolts.

The Screw market is becoming a little more irregular, some manufacturers showing a disposition to quote lower prices than have been ruling, and the market is therefore weaker, though the leading manufacturers are not meeting the extreme prices.

The Ireland Mfg. Company, W. H. Jacobus & Co., agents, 90 Chambers street, New York, have reduced the price of the Morris Sash Locks to the following figures:

Iron.....dis 60&10 %
Iron, Nos. 04½, 4½, 5.....75 %
Real Bronze.....60 %

The Association of Copper Manufacturers of the United States have adopted, under date of the 17th inst. the following prices for

SHEET AND BOLT COPPER.

It will be observed that the classification is altered and the price advanced about a cent a pound:

Sizes of sheets.	64 oz. and over.	32 oz. to 63 oz. inclus.	16 oz. to 31 oz. inclus.	14 oz. to 16 oz.	12 oz. to 14 oz.	10 oz. to 12 oz.	8 oz. to 10 oz.	Lighter than 8 oz.
	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.	Cts. ℔ lb.
Not wider than 30 in. & not longer than 72 in.	17	17	17	18	19	20	23	24
Not wider than 30 in. & longer than 72 in.	17	17	17	18	20	22	26	...
Not wider than 36 in & not longer than 96 in.	17	17	17	19	21	25	28	..
Not wider than 36 in. & long'r than 96 in.	17	17	18	20	22	26	29	....
Not wider than 48 in. & not longer than 72 in.	17	17	19	21	23	24	31	...
Not wider than 48 in. & long'r than 72 in.	17	17	20	22	24	26	33	....
Not wider than 60 in. & not longer than 96 in.	17	18	21	24	29	....	....	..
Not wider than 60 in. & long'r than 96 in.	18	19	22	....	....	....	....	....
Not wider than 84 in. & not longer than 96 in.	19	20	23	....	....	....	....	....
Over 84 in. wide	20	21	23	....	....	....	....	....

All Bath Tub Sheets, per lb. 16 oz., 19¢; 14 oz., 21¢; 12 oz., 23¢; 10 oz., 25¢.

Bolt Copper ⅝ inch diameter and over, per lb., 17¢.

Circles, 60 inches diameter and less, 3¢ per lb. advance over prices of Sheet Copper of the same thickness.

Circles, over 60 inches diameter, up to 84 inches diameter inclusive, 4¢ per lb. advance over prices of Sheet Copper of the same thickness.

Circles, over 84 inches diameter, 5¢ per lb. advance over prices of Sheet Copper of the same thickness.

Segment and Pattern Sheets, 3¢ per lb. advance over price of sheets required to cut them from.

Cold or Hard Rolled Copper, 1¢ per lb. over the foregoing prices,

Tinning.

Tinning Sheets on one side, 10, 12 and 14x48, each 6¢
Tinning Sheets on one side, other sizes, per sq. foot.....2½¢
For Tinning both sides, double the above prices.
For Tinning Boiler Sizes, 9 inches, 14x60, each..15¢
For Tinning Boiler Sizes, 8 inches, 14x56, each..12¢
For Tinning Boiler Sizes, 7 inches, 14x52, each..12¢

Merchant & Co. issue the following price list for the Stove and Tin trade:

Cold-Rolled Sheet Copper, All Sizes.

For Wash Boilers, Stove Reservoirs, &c. Perfectly Flat and Bright.

Per pound.
16 oz. per square foot and heavier.....18¢
14 and 15 oz. per square foot.....19¢
12 and 13 oz. per square foot.....20¢
10 and 11 oz. per square foot.....21¢

Tinning.

Sheets, one side, 10, 12 and 14 by 48.....each, 6¢
Sheets, one side, other sizes, per square foot, 2½¢
For tinning both sides, double the above prices.
For tinning Boiler sizes, 9 in., 14 x 60.....each, 15¢
For tinning Boiler sizes, 8 in., 14 x 56.....each, 12¢
For tinning Boiler sizes, 7 in., 14 x 52.....each, 12¢

Cold-Rolled Sheathing Copper, 14 x 46,

Per pound.
16 oz. to square foot and heavier.....17¢
14 oz. and up to 16 oz.....18¢
12 oz. and up to 14 oz.....19¢
Tinning, 6¢ each.

Copper Bottoms.

Pits and Flats, 14 oz.....20¢
Pits and Flats, 12 oz.....21¢

The Abram Cox Stove Co., 76 Wabash avenue, Chicago, as miners' agents, issue the following net price list of

IDAHO MICA,

taking effect on the 1st inst. It is put up in ¼ pound packages; they say it splits well, and guarantee it to stand fire as well as the North Carolina mica:

Size.	Price per lb.	Size.	Price per lb.	Size.	Price per lb.
1½x2	$0.15	2½x3½	$0.37	3½x 4	$3.38
1½x2¼	.19	2½x3⅝	.46	3½x 4¼	3.61
1½x2½	.19	2½x3¾	.59	3½x 4½	3.90
1½x2¾	.19	2½x4	.60	3½x 4¾	4.17
1½x3	.19	2½x4¼	.89	3½x 5	4.47
1½x3¼	.19	2½x4½	1.29	3½x 5¼	4.47
1½x3½	.19	2½x4¾	1.55	3½x 5½	4.75
1½x4	.24	2½x5	2.14	3½x 6	4.99
1½x4¼	.41	2½x5¼	2.14	3½x 6½	4.99
1¾x2	.19	2½x5½	2.14	3½x 7	4.99
1¾x2¼	.19	2½x6	2.24	3½x 8	4.99
1¾x2½	.19	2½x6½	2.50	3¾x 3¾	3.33
1¾x2¾	.19	2½x7	2.50	3¾x 4	3.55
1¾x3	.19	2½x8	2.50	3¾x 4¼	4.04
1¾x3¼	.19	2¾x2¾	.37	3¾x 4½	4.04
1¾x3½	.19	2¾x3	.41	4 x 4	3.76
1¾x3¾	.24	2¾x3¼	.48	4 x 4¼	4.04
1¾x4	.24	2¾x3½	.62	4 x 4½	4.17
2 x2	.19	2¾x3¾	.76	4 x 5	4.47
2 x2¼	.19	3¼x4	.84	4 x 5¼	4.47
2 x2½	.19	2¾x4¼	1.29	4 x 5½	4.75
2 x2¾	.19	2¾x4½	1.90	4 x 6	4.99
2 x3	.24	2¾x4¾	2.24	4 x 6½	4.99
2 x3¼	.24	2¾x5	2.57	4 x 7	4.99
2 x3½	.24	2¾x5¼	2.81	4 x 8	4.99
2 x3¾	.29	2¾x5½	3.22	4 x 9	4.99
2 x4	.46	2¾x6	3.33	4¼x 4¼	4.17
2 x4¼	.48	3 x3	.76	4¼x 4½	4.17
2 x4½	.62	3 x3¼	.86	4¼x 5	4.47
2 x5	.84	3 x3½	1.14	4¼x 4½	4.36
2 x5½	.95	3 x3¾	1.41	4½x 5	4.47
2 x6	1.29	3 x4	1.79	4½x 5½	4.75
2 x7	1.36	3 x4¼	2.14	4½x 6	4.99
2 x8	1.55	3 x4½	2.81	4½x 6½	4.99
2¼x2¼	.19	3 x4¾	3.64	4½x 7	4.99
2¼x2½	.19	3 x5	4.28	4½x 8	4.99
2¼x2¾	.24	3 x5½	4.28	4½x 9	4.99
2¼x3	.24	3 x6	4.75	5 x 5	4.47
2¼x3¼	.29	3 x6½	4.75	5 x 5½	4.99
2¼x3½	.37	3 x7	4.75	5 x 6	4.99
2¼x3¾	.46	3 x8	4.75	5 x 6½	4.99
2¼x4	.56	3 x9	4.75	5 x 7	4.99
2¼x4¼	.76	3¼x3¼	1.55	5 x 8	5.18
2¼x4½	.94	3¼x3½	2.08	5 x 9	5.18
2¼x4¾	1.08	3¼x3¾	2.33	5 x10	5.18
2¼x5	1.62	3¼x4	2.57	5½x 6	5.18
2¼x5¼	1.62	3¼x4¼	2.85	5½x 7	5.18
2¼x5½	1.90	3¼x4½	3.12	5½x 8	5.18
2¼x6	2.09	3¼x4¾	3.64	5½x 9	5.18
2¼x6¼	2.14	3¼x5	4.47	6 x 6	5.18
2¼x6½	2.14	3¼x5¼	4.47	6 x 6½	5.18
2¼x2½	.24	3¼x5½	4.75	6 x 7	5.56
2¼x2¾	.29	3¼x3¼	2.57	6 x 8	5.56
2¼x3	.29	3½x3¾	3.12	All larger	5.66

Sise, Gibson & Co. issue, under date of the 1st inst., the following discount sheet of the goods made by the Barnes Mfg. Company, of which they are sole agents. They call particular attention to their line of Drawer Locks:

	Discount.
"Horse Shoe" Padlocks, No. 610	40 %
"Horse Hoof" Padlocks, Nos. 620 & 622	50 %
Padlocks, Nos. 676 & 678	40&10&5 %
Drawer Locks, Nos. 440 to 462	40&10 %
Drawer Locks, Nos. 472 to 474	40 %
Night Latches, Nos. 82 to 95	50 %
Night Latches, Nos. 104 to 152	40&10&5 %
Screen Door Latches and Locks, Nos. 52 to 78	50 %
Store Door Locks, Nos. 250 to 256	40&10 %
Blank Keys	60&10 %
Fitted Keys	50 %

The following price list for Shot has been adopted, taking effect on the 17th inst., subject to a discount of 2 cents per bag of 25 pounds if paid within five days from receipt of bill:

Drop Shot, per 25-pound bag	$1.60
Drop Shot, per 5-pound bag	.37
Buck and Chilled, per 25-pound bag	1.85
Buck and Chilled, per 5-pound bag	.42

The Chicago Spring Butt Co., Chicago, Ill., announce that they have withdrawn the agency of their goods from Mr. H. J. Brainerd, 97 Chambers street, New York, and request that all orders and correspondence be addressed to them at their Chicago office, or to Mr. Shankland, who will represent them in the Eastern territory hereafter.

A. G. Coes & Co., Worcester, Mass., for whom John H. Graham & Co., 113 Chambers street, New York, are agents, have made some important modifications in the manufacture of their goods, giving greater strength and durability and improving the appearance. Illustrations showing the details of the new Wrench will appear in their advertisement in our next issue. The following is their description of the improvement, which has been recently patented, and which, they say, has been thoroughly tested:

1. The main bar is re-enforced by adding metal to the back, which prevents it from bending or springing when severely used. A Wrench made with this bar is stronger than any other make of a corresponding size, because the bar is larger near the stationary jaw, where the strain is concentrated. This is the only successful re-enforced Wrench bar ever made, all others having failed when subjected to severe strain.

2. The ferrule is held firmly in place by a nut screwed on the bar, which prevents it from being forced back into the handle by use.

3. The special improvement to which attention is called is the way in which the handle is made and fastened to the shank.

This handle is made better and stronger than heretofore by using our new cup tip at the end, which incloses the wood and keeps it from splitting. This is the only Wrench which has the wood handle firmly secured and held together at each end, and this handle will stand more rough usage and last longer than any now made. It is not affected by heat, cold or moisture.

The Scott Mfg. Company, Baltimore, Md., issue the following notice to the trade:

It is our unpleasant duty to again notify the trade regarding the infringements of our patents on Reversible Ice Creepers and Rotary Knife Peach Parers. After the United States Circuit Court decided on our Ice Creeper patent, we were disposed at first to stop litigation, but after consulting several competent experts, and an examination of the entire case, the opinion is general that the court was in error in its decision on a part of our patent, and we expect to carry the case to the Supreme Court. We are informed that the same parties are about offering for sale a Peach Parer with a rotary knife, which we claim is an infringement on our rotary knife, which has long been conceded as the first in the art, and the only practical Peach Parer.

We propose to fully protect our patents, and prefer doing so against parties who manufacture infringing articles, but are not thereby debarred from looking to the trade for damages we sustain by sales they make. We warn the trade not to be misled by supposing any expired patent for rotary choppers in Peach Parers in any way effects our patent rotary knife for Peach Parers, which are the first patents on a draw-cut knife, which removes a continuous paring.

We invite the attention of our readers to the advertisement on page 30 of the Hotchkin Carriage Works, Syracuse, N. Y. This concern are seeking to reach the Hardware trade generally, and we are informed that they have had very satisfactory success, many dealers selling their Carriages quite extensively. There is no reason why the Hardware trade in the United States, as in other countries, should not do a very large business in Carriages and such goods.

The Empire State Mfg. Company, Buffalo, N. Y., Bixby & Drullard, proprietors, under date of the 15th inst., issue a new catalogue and price list of Copper and Half Copper Tea Kettles, Copper Wash Boilers, Copper Wash Basins, Nickel and Brass Cuspidors, Crimp Machines, Counter Peg Flotes, Awls, Coffee Pot Stands, &c. Among the new goods shown in this catalogue are a line of Brass and Nickel-Plated Cuspidors, plain and embossed. Their list gives an assortment of standard goods, the quality of which is very celebrated, and they are, besides, "prepared to negotiate for the manufacture of any specialties that the present or future requirements of the trade may call for."

The new catalogue and price list of the Payson Mfg. Company, Chicago, is at hand, giving price lists and illustrations of their specialties. In their introductory circular they call attention first to their Transom Lifters, which have been so favorably received that they have felt warranted in making a full line of them, which they are now doing as rapidly as possible. They recommend them as perfect in principle as well as finely-finished goods. The demand for their patent Casters has grown so fast that they have often been behind their orders, but with their new facilities they hope to be able to ship goods more promptly. They have ceased making Door Latches, Store-Door Handles, Shutter Bars and Knobs, Door Bolts, Screen Corners, Sash Lifts, &c., and will in future devote their entire attention to patented specialties.

LETTERS FROM THE TRADE.

A correspondent in Yazoo City, Miss., alludes as follows to the situation in that section:

July has entered with a change for the better in the way of weather, the past month having been one of almost constant rain in this section. The cotton crop is badly in the grass on this account, but a week more of dry weather will put things right in a great measure. Trade is of course "dead" in this section at this stage of the crops.

One of our subscribers in Dakota writes:

Iron Nails are abandoned in this section of the country. Nothing but the Steel Cut and Wire Nails are used, which are a marked improvement over the Iron Cut Nails. I have a few kegs of the Iron Cut Nails left, and I find they are hard to get rid of at any price. I have no doubt but that Steel Nails could be put at a price higher than they now are and sell the same amount of Nails, for they have the preference. Why do not manufacturers raise the price? They are too low. Nails help to raise the price of other goods in the Hardware line. I would rather see higher prices, as it would be better for the retailer and more beneficial to all.

Another correspondent from this Territory says:

I have taken quite an interest in the discussions in *The Iron Age* in regard to arranging stores, &c., having spent a good many years in trying to make any improvement possible in handling and arranging goods. In regard to Copper Rivets in half-pound boxes, I think the Western Hardwareman is mistaken. That size package has been in the market a long time, but I never ordered but one lot. It is as easy to sell a pound as a half-pound, and instead of increasing trade decreases it. In reply to the Massachusetts dealer in regard to a system by which goods could not be sold without charging, I enclose a sample leaf of our order book, through which everything sold must go, and as the stub is left it leaves but little chance to forget anything. It takes time, but pays. I also inclose a marking tag that is very convenient and useful. It costs about the same as a common string tag, and when left on goods after purchase is a good advertisement.

Referring to this latter subject, we have the following from a subscriber in St. Louis:

In *The Iron Age* of the 1st inst. I notice the complaint of a retailer in regard to goods being delivered by clerks, who neglect to charge them. Where this occurs very often I think you will find it a case of either careless and negligent clerks or want of proper system in the management of the store. One simple way to check it is to furnish the clerks with numbered checks in blocks, each check having a duplicate number on a stub. The clerk itemizes each sale on both the check and stub, making same either "cash" or "credit." The original check goes out with the goods and serves as a bill, while the stub remains with the salesman, to be turned in at night to the bookkeeper or cashier, as the case may be, who then compares all the stubs so turned in with the "cash" and "credit" sales of the day. If everything does not balance at night, mistakes have been made. Locate them, and, if necessary, charge the deficit to the careless clerk making the same. A few lessons of this kind will insure more care in the future. It is well to remember, however, that a rule made and not enforced is worse than no rule at all. If you adopt the system, follow it up and you will have no goods in the future delivered without being either paid for or charged.

A correspondent in Indiana makes the following very pithy and practical observations:

It is becoming quite a common thing for Hardwaremen in this part of the country to sell Mantels and Grates, not always in large quantities, though. In some localities a room is partitioned off with glass sash, and arranged tastefully. I have sold but few, but the manner of arranging the lists has excited my admiration (!). I have never seen two lists or catalogues arranged the same, and never one that was comprehensive. For instance, I sent to a firm for prices of Baltimore heaters. They kindly inclosed with the information I desired a large sheet illustrated with cuts of 23 or more mantles, some with grates, others with summer fronts, some with hearth, others without. One of these cuts was very elaborate Tile Linings, Tile Facings, Fire-Stand, Grate, Brass Fender and Tile Hearth, &c., listed at $140. In their letter they had stated the discount at which they would be pleased to sell me. Now, I thought the $140 lay-out was reasonable in price, as it showed up in the cut, but felt safer to write and find if the whole shooting-match came in for the $140. In reply they stated that only the Mantel was included in the $140; the accompaniments were only shown to dress the Mantel up. I shudder to think of the results had I sold some kind friend the whole thing as shown in the picture at what the mantel would have sold for. Ordering from a cut of an article in a Hardware catalogue I expect to get what and all I see represented. In ordering Mantels the Hearth is usually extra. Sometimes Blowers come with the Grates, and sometimes not. Brick or Tile accompany some Grates, and some times do not. The average Grate and Mantel catalogue of a Cincinnati house or manufacturer is a study to get head or tail out of it. Why can't they get up a catalogue that a country Hardwareman can understand? I am not prepared to speak definitely on all points in regard to the *National Builder's* estimate on tinwork, as published in *The Metal Worker*, July 10, as I have only been giving prices on tin work for five years. But I have always used 20 x 28 Tin for standing-seam roof, while in their table they say this size is "not used" for standing seam. I expect to see other exceptions taken to their estimates. Trade remains about the same as at last writing, very quiet in all departments, and no change in prices. There is a noted absence in prices given for "leaders" which was much in style a few years ago. Fishing is good; the time required to catch a mess remains about the same.

WIRE NAILS.

We print the following additional letters from many points on the subject of Wire Nails, in which our readers appear to take considerable interest:

Cohoes, N. Y.—Have had to sell my stock of Finishing Nails and Brads in papers, sizes from ½ to 2 inches, below cost. Mechanics will buy nothing else in this market but Wire Nails. We are having a demand, which has just started, for Wire Nails for flooring and boxing. The Cut Nails are of such poor quality, all of them, that mechanics are complaining all the time. Am satisfied that with the quality of Standard Cut Nails at present Wire Nails will supersede to a large and growing extent. Mechanics prefer Wire Nails because they get value for the money in perfect Nails. For instance, last week: In one keg of Flooring Nails (naming the brand) a fair sample of other makes, my customer has four pounds of bad Nails, besides all he threw away, splitting, sliver points, &c.

Binghamton, N. Y.—Our sales on Wire Nails for the last three years have at least doubled each year over the previous year. The Standard Wire Nails above 2 inches in length have had a very light sale so far. Mechanics generally speak well of them, and many of them say it is only a question of time when they will largely take the place of Cut Nails.

Detroit, Mich.—We are carrying a stock of Wire Nails, but our sales so far to retail trade have been mostly sample lots. If they can be manufactured and sold at a price comparatively no higher than the ordinary Cut Nail they could undoubtedly be readily disposed of. As yet that is not being done, and we do not expect a very large sale except for special purposes.

Bloomfield, Ind.—We have not had much experience with Wire Nails further than what we have sold for casing and molding. We consider them superior to the Cut Nail for above purposes, and think they will come into general use in the near future if they can be produced cheap enough to bring them in competition with the Cut Nail.

Waterville, N. Y.—We have never handled Wire Nails except in 1 pound packages, but are just about making arrangements to sell them in bulk. Our experience with the smaller sizes, 1½ to 2 inches, has been very satisfactory. They meet with very ready sale, and are very much liked, owing principally to the fact that they never split the wood. The Wire Brads and Carpet Tacks are also very popular. In regard to the larger sizes and to selling them in bulk we think they will eventually come into quite general use, but it will take some time to educate the retail trade up to it and to convince our customers that they are not much more expensive than the ordinary Nail, but we think the day is not far distant when they will be sold in nearly all Hardware stores in good assortment and meet with ready sale.

Elyria, Ohio.—I don't keep in stock the Standard Steel Wire Penny Nails, and have had but a limited call for them. I keep a full line of Steel Wire Brads from 2½ to 3 inch in stock, and my trade do not call for any other Nail for inside work. Cut Brads are a thing of the past, and Steel Wire Brads will soon take the place of Casing Nails in this section. I have taken some pains to interview commercial travelers with reference to the sale of Steel Penny Nails. They say the trade is light and mechanics are not as a rule in favor of them. I don't believe they will take the place of our best brands of Cut Steel or Iron Nails. They will be used for special purposes, making boxes, &c.

Port Carbon, Pa.—I am favorably impressed with Wire Nails, but have not been able to introduce any of the larger sizes into my trade thus far on account of the low price of Cut Nails and consumers knowing so little about them in this region. The 2 inch No. 12 and all sizes under are taking the place of corresponding sizes of Finishing Nails and Brads. Having been a practical mechanic myself, I think they are destined to take the place of Cut Nails to a great extent, as they make much neater work.

Delaware, Ohio.—Our trade use the Steel Wire Brads for molding and casing exclusively. We cannot sell any more patent Brads or Finishing Nails in small sizes. The penny Nails are being used by our trade only in limited quantities. The Steel Cut Penny Nails are popular with the farmers, but are condemned by nearly all of the carpenters. They say the Iron Nails are good enough to drive in any wood, and if they want to tear work apart, take down scaffolding, &c., they can do it with the Iron Nails without splitting the wood, a thing they cannot do with the Steel Nails. It looks now as though the Iron Nails will come to the front again. We have been keeping nothing but Steel Nails for nearly a year, but the frequent orders received for Iron indicate to us that we will have to carry both Iron and Steel in stock, which will be a nuisance. There is no question in our minds as to the Steel Nails being superior to the Iron if holding qualities are advantages, which surely is a fact.

Unionville, Conn.—Wire Nails are destined to be the future Nail. For molding, casing and finishing they have already driven the Cut Nail out of this market. The builders and wood-workers in this place say they want no other for hardwood finish, and hail their advent with much enthusiasm, and call them superior for all work. Cost of Nail for Nail is but little more, and results balance the difference. Their use affects my Screw trade, being used in place of Screws for many purposes.

Geneva, Ohio.—Our experience with Wire Nails has not been large, although we are now selling them in keg lots, and the demand is increasing. One or two of our builders will use nothing else; yet we hardly think they will entirely take the place of the Cut Nails, but will be called for frequently enough to compel the dealer to carry nearly all sizes in addition to his Cut Nail stock. We would be glad to see the trade settle down to some one kind of Nail, as we are obliged to carry all sizes of Cut Iron and Steel Nails, and Wire Nails, too. They occupy too much room.

Iowa.—About three months ago, after a hard struggle with the salesmen, I was induced to try a few sample kegs of the Steel Wire Nails. I advertised them extensively, and had hard work to introduce them, but by constant labor I have worked up quite an extensive trade for them, and not infrequently parties that are building come with bills to be filled with nothing but the Steel Wire Nails, all sizes from 3d. fine to the largest Spikes. I have no doubt that in less time than a great many think there will be but few, if any, other Nails used.

Canon City, Col.—We have had but partial success in introducing them in place of Brads and Finishing Nails, and more in the cut sizes. The "long felt want" which it was said they were to meet certainly does not make itself apparent in our trade. Some mechanics ask for them in the smaller sizes, but do not appear to have any decided preference for them, while others decline to take them at all—simply "don't like 'em." Our idea is that their introduction will be at the best a gradual one, and that for some purposes they will not be found satisfactory.

Ipswich, D. T.—In regard to Steel Wire Nails, as referred to in your issue of May 20, would say that we are selling a great many of them of all sizes in competition with the common Nails. The contractors here are all using them, as they prove to be the cheapest Nail. This country is largely settled with Germans and Russians, and they will take no other Nails as long as they can get these.

St. John, Mich.—We have just commenced to handle Wire Nails in kegs. We predict for them a large sale, and think in time they will take the place of Iron or Steel Nails.

New London, Conn.—In regard to Wire Nails our builders will only use the Wire Brad, which takes the place of Cut Finishing Nails. These we keep in stock up to 3-inch. I find that since we have begun the sale of Wire Brads our sale of Cut Brads has dropped off, and we have very little sale now for the Cut Brads or Finishing Nails, the Wire Brads being used almost exclusively. I think that in time the Wire Nail will come into general use.

Stanton, Mich.—For the past eight months we have kept in stock Wire Nails and Brads. In this departure we are meeting with good success, especially in the Wire Brads with bung head, which give exceptional satisfaction. We have recently completed a new store building, interior woodwork being black ash and cherry. For this we used Wire Nails exclusively, with the best results. Our trade in this line is developing daily. We have no doubt that the Wire Brads will supersede the patent Brad. Our trade in Wire Nails for general work is yet limited. Wherever we have sold the results are very satisfactory.

Rock Island, Ill.—For some kinds of work they will do, but only in hard woods where the work is stationary. When they are used in work that has to stand the jarring of machinery or light cases in transportation, they will not do so well. In soft wood they will not be used unless there is more barb put on

them, and then if they have to be drawn for any reason they mar the wood so that our builders will not use them. Indeed, most of them prefer a clean Iron Nail to the Steel Nail.

Aspen, Col.—In this immediate locality the Barb Wire Nail has not been introduced, except in a very small way for tin roofing. I believe Denver is now trying them, but I have heard of their introduction in no other portion of Colorado. The Nails made by the Colorado Coal and Iron Co. until recently were far superior to any Nail that has ever been made in the East, owing to the very superior quality of the iron used by the company, which they mine and put through all the different processes until the Nail is made. These Nails being of such tough iron they have been used largely as Clinch Nails, for making doors and such work and in consequence, the consumers have had little occasion to call for anything different.

The following is the new discount sheet (No. 5) of the

PECK, STOW & WILCOX CO.,

just issued, but bearing the date of June 24, 1886. Special goods marked A are net, and subject only to a cash discount of 2 per cent. All others are subject to a cash discount of 10 per cent.:

Tinners' Tools and Machines.

Page in 1885 catalogue.		Dis. per cent.
13-15, Stow's Patent Folders	A	net
16, 17, Grooving Machines	A	net
18-25, Stow's Pat. Incased Machines	A	net
26-31, Raymond's Patent Machines	A	net
32-37, No. 1 Machines	A	net
38, Power Machines	A	net
39, Moore's Double Seamers	A	net
40, 41, Stow's Double Seamers	A	5
42, 43, Olmsted's Double Seamers	A	10
44, Burton's Double Seamers	A	5
45, Hulbert's Double Seamers	A	20
46,47, Beading Machines	A	5
48, 49, Crimping Machines	A	5
50, Stove-Pipe Formers, Nos. 1, 2	A	20
50, Tin Pipe Formers, Nos. 1, 2	A	20
50, Nos. 0, 5, 0000, 000, 00 Formers	A	5
51, 52, Stow's Improved Formers	A	5
53, Square Box and Can-Top Folders	A	5
54, 57, Forming Machines	A	5
58, 59, Sheet Iron Folding Machines	A	5
60, Patent and improved Gutter Machines	A	5
61, Gutter Machines and Gutter Rods	A	20
62-65, Squaring Shears	A	15
66-68, Circular Shears	A	5
68½, Samson Punch	A	5
69, Waugh's Circular Shears	A	10
69, Shear and Punch	A	5
70, 71, Tinners' Shears and Snips	A	20
72, Bench Plates	A	20
72, Shear Holder and Patent Gauge	A	5
73, Hammers	A	20
74, 75, Set Tinners' Tools	A	20
76, 77, Wrought Stakes	A	20
78, 79, Wrought and Cast Stakes	A	20
80, Swedges	A	20
81, Square Pan Machines	A	5
82, Solid Punches	A	50
82, Hollow Punches	A	20
83, Rivet Sets and Chisels	A	60
83, Hand Groovers	A	20
84, Tinners' Awls and Cutting Nipper	A	25
85, Tinners' Mallets	A	50
85, Cornice Brake	A	net
86, Roofing Tools	A	20
87, Bell's Roofing Edger	A	net
88, 89, Roofing Double Seamers	A	net
90, 91, Tinners' Press	A	net
92, 93, Sundry Machines and Parts	A	net

Tinners' Hardware.

95-103, Coffee Mills	A	45&10
104, Candle Sticks		25
104, Flue Stops		33⅓
105, American Snuffers		No goods.
105, Plumbers' Scrapers		25
105, Paste Jaggers		25
106, Coppers and Copper Handles		40
106, Plumbers' Ladles		25
107, Wire Gauges		16⅔
108, Fire Pots		30
109, Malleable Kettle Ears		33⅓
110, Kettle and Tea-Kettle Ears		50
111, Malleable Ears and Clips		25
112, Milk Cans and Toilet Handles		25
113, Saucepan Handles		33⅓
113-115, Teapot Handles		30
116, Waffle Iron and Coffee Roasters		10
117, Toy Sad-Iron Stands		33⅓
118, Sad-Iron Stands		33⅓
119, Coffee-Pot Stands		30
120, Stove Cover Lifters		30
121-123, Stove Pokers		50
124-125, Coal Tongs		33⅓
126, Coal Shovels		33⅓
127-133, Shovel, Tongs and Pokers		50&5
134-136, Shovel and Tongs Stands		50&5
137, Fire Sets		60
138-143, Fire and Kitchen Sets		50&10
144, 145, Blower Stands		50&10
146, 147, Iron Fire Dogs		50&10
148-156, Brass Andirons and Fenders		50&10
157, Umbrella Stands		60
158-169, Match Plates and Safes		40
170, Towel Rollers		50
170, Book Racks		40&10
170, Stove Bolts		50&10

General Hardware.

173, Mechanics' Wrenches	60
174, Machinists' Wrenches	60&10
174, Agricultural Wrenches	70&10
175, Shepard's Wrenches	75
175, Coe's Malleable Wrenches	75&5
175, Add Hayden's Pocket Wrenches.	
175, No. 1 Plain, 4 inches, per doz., $3.75	70
175, No. 2 Polished, 4 inches, per doz , $6.25	70
175, No. 3 Nickel Plated, 4 in., per doz., $10.00	70
175, No. 4 Plain, 6 inches, per doz., $6.25	70
175, No. 5 Polished, 6 inches, per doz., $11.25	70
175, No. 6 Nickel Plated, 6 in., per doz., $15.00	70
176, 177, Steel and Iron Squares	66⅔
178, Wing Dividers	60
179, Calipers and Compasses	50
179, Flat and Round nosed Pliers	40
179, Carpenters' Pincers	40&10
179, Add 6 inch per doz., $5.25	
180, Socket Firmer Chisels, No. 1 Ex	60&10
180, Socket Firmer Chisels, No. 1	60&10&5
191, Socket Framing Chisels	60&10
181, Socket Corner Chisels	60&10
181, Carpenters' Slicks	60&10
182, Socket Framing Mill Chisels	60&10
182, Socket Firmer Mill Chisels	20
182, Socket Paring Chisels	20
183, Extra Tanged Firmer Chisels	30&10
183, Extra Tanged Firmer Gouges	30&10
183, Socket Firmer Gouges	20
184, Socket Firmer Millwright Gouges	20
184, Socket Firmer Paring Gouges	20
185-187, Drawing Knives	60&10
188, 189, Handles	70&10
190, 191, Hatchets and Boys' Axes	25
192, Bush Hooks	25
193, Butchers' Cleavers	20
193, Corn Hooks	33⅓
194, Cast Hatchets	25
194, 195, Steak Hammers	25
195, Nail Hammers	33⅓
196-197, Tack Hammers	33⅓
198, Nantucket Drivers	25
198, Carpet Stretchers and Tack Claws	33⅓
199, Shoe Hammers	33⅓
200, Peck's Patent Braces	40&10
201, Bit Braces	50
202, Saw Rods	33⅓
203, 204, Saw Sets	33⅓
204, Cheese and Butter Triers	25
205, Screw-drivers	60
206, Box Scrapers and Chisels	40
206, Cold Chisels	60&10
207, Box and Cotton Hooks	50
208, 209, Vises	33⅓
210, Geared Breast Drills	40&10
210, No. 4 Nickel-plated Drill	25
211, Ratchet and Blacksmith Drills	16⅔
212, Blacksmiths' Shoeing Pincers	33⅓
212, Blacksmiths' Butterises	33⅓
212, No. 12 Farrier's Hammers	33⅓
213, Steel Traps	55
214, Wagon Jacks and Jack Screws	25
215, Bench Screws	25
215, Door Clamps	30&10
216, 217, Quilt Frame and Cabinet Clamps	33⅓
217, Carriage-makers' Clamps	25
218, Ice Picks and Ice Axe and Picks	33⅓
219, Scratch Awls	33⅓
220, 221, Steelyards	33⅓
221, Scale Beams	40&10
222, Spring Balances	33⅓
223, Tea and Counter Scales	25
224, Dixon's Meat Cutters	20&5
225, Hale's Meat Cutters	60
226, 227, Meat Cutters	30&5
227, Sausage Fillers	33⅓
228, Cherry Seeders	30
229, Apple Parers	No goods.
230, Tobacco Cutters	33⅓
232, Door Bells—change list. Nos. 905 910 915; $8.50 10.00 12.00	
235, Add No. 07 Bell Lever per doz., $2.15	
240, Change list, No. 0560 to $1.65	
231-251, Door Bells and Levers	30
252, Trip Gong Bells	30
253, Alarm Door Bells	30
254, 255, House Bells on Carriages	12½
256, Slide Bell Pulls	25
256, 257, Bell Cranks	30
258, Bell Cranks, Spikes and Springs	20
259, Hand Bells	30
260-266, Call Bells	25
267-269, Flush Bolts	35
270, 271, Cast Brass Flush Bolts	30
272, 273, Mortise Front Door Bolts	30
274-276, Chain Door Fasteners	34⅓
277-279, Chain Door Bolts	35
281, Bottom Bolts	35
282, 283, Spring Foot Bolts	35
284-286, Square Spring and Square Cased Bolts	40
287, Nos. 415 and 417, Wrought Spring Bolts	66⅔
287, No. 503, Cast Spring Bolts	60
288, 289, Wrought-iron Square Bolts	55
290, Cast Brass Square Spring Bolts	30
291, Cast Brass Square Neck Bolts	25
291, No. 425, Wrought Square Necked Bolts	66⅔
291, No. 504, Cast Square Necked Bolts	60
292-293, Barrel Bolts	33⅓
294, Nos. 500, 506, Cast Barrel Bolts	40&10
294, 295, Wrought Barrel Bolts	60
296, 297, Cast Brass Barrel Bolts	33⅓
298, Iron Knob Tower Bolts	40&10
298, No. 502, Flat Shutter Bolts	40&10
298, No. 505, Lever Bolts	40
299, Japanned Staples	50
299, Flat Ship Bolts	45
299, Straight Cupboard Bolts	45
300-302, Flat Cupboard Bolts	40
303, Brass Show Case Catches	30
303, Flush Cupboard Catches	30
304, 305, Brass Flush Cupboard Catches	30
306, 307, Cupboard Latches	33⅓
308-318, Cupboard Catches	33⅓
319-323, French Window Catches	33⅓
324-327, Cupboard Turns	35
328, 329, Screen Door Catches	40
330-332, Door Buttons	35
333-349, Sash Fasts	33⅓
350-353, Sash Locks and Window Casters	33⅓
354-357, Shutter Bars	30&10
358 360, Sash Lifts	30
361, Shutter Lifts	37½
362, Sash Lifts and Locks	37½
362, Shutter Knobs	30
363, Stubs and Plates	25
363, Shutter Screws	25
364, Window Spring Bolts, change list. Nos. 110 115 120 137; Per gross $1.75 1.75 2.25 3.75	40
364, Window Spring Bolts and Sockets	40
364, Window Springs	33⅓
364, Add Window Springs to screw No. 27, Brass Bolt, per gross $7.00; No. 29, Iron Bolt, per gross 5.00	
365, 366, Sash Cord Irons, Centers and Props	33⅓
366, 367, Trunk and Sash Rollers	33
368, 372, Axle and Frame Pulleys	33⅓
373, Hay Fork Pulleys	35
373, Add No. 14.—1¼ inch list. Per doz. $2.80	
374, 375, Screw and Side Pulleys	20&10
376, Upright and Yard Line Pulleys	30
376, Add Yard Line Pulleys. No. 235 Japanned 2½ inch, per doz, $0.85; 3 inch, per doz. $1.10.	
376, No. 230 Galvanized, 2½ inch, per doz. $1.40; 3 inch, per doz. $1.75	
377, Clothes-Line Pulleys	25
378, 379, Hot-House and Awning pulleys	25
380, Sliding Shutter Sheaves	30
380, Incased Swivel Pulleys	30
381, Well Wheels and Hooks	33⅓
382, 397, Drawer Pulls	30
398, 399, Card Frames	40&5
400, Cast Brass Flush Rings	50
400, Pendant Drawer Pulls	40
401, Drawer and Lifting Handles	50&10
402, Cast Brass Lifting Handles	50
402, Japanned Lifting Handles	40&10
403-408, Chest Handles	50&10
409, French Window-Shutter Handles	40&10
409, Trap-door Rings	50&10
410, Door Knobs	50
411, Escutcheons	50
412, 413, Letter-box Plates	40&10
414-435, Store-door Handles	30
436, Barn-door Bolts	30
436, 437, Barn-door Latches	25
438, Add Cottage Latch—No. 39, per doz. $1	
438-441, Thumb Latches	25
442-446, Door Pulls	33⅓
446, Add Screen Door Pull No. 7. Per doz., $0.36	
447-469, Hat and Coat Hooks	40
469, Add Hat and Coat Hooks with Wrought Screw: No. 33 Japanned, per grs., $3.60; No. 135, Coppered, per gross, $3.60.	
470-474, Wardrobe Hooks	40
475-477, School-house Hooks	40
477-479, Clothes-line Hooks	40&10
480, 481, Harness Hooks	40&10
482-487, Chandelier and Ceiling Hooks	40&10
488, Lamp and Cabin-door Hooks	40&10
489, Drive and Screw Hooks	50
490, Molding and Mirror Hooks	50
490, Cup Hooks	50
491, Hammock Hooks	40&10
492-499, Bird-cage Hooks	40&10
500-570, Casters, see new list, old list discarded.	
508, Bed Keys	40&10
509, Bedstead Fastenings	40&10
510, Ox Bow Pins	50
511, Cattle Leaders and Bull Rings	55&5
512, Ox Bells	40&10
513, Plumb Bobs	50
514, Hitching Rings	50
514, Hog Scrapers	45
515, Pruning Shears	50
516, Nut Crackers	50
517, Garden Forks and Trowels	40&10
518, Boot Jacks	40
519, Foot Scrapers	50
519-521, Kitchen Grindstones	20
522, Grindstone Fixtures	40&10
523-525, Strap and T Hinges A	65&5
526, Hinge Hasps A	65&5
526, 527, Hook and Plate Hinges	40
528-530, Wrought Butts and Hinges A	65
531-533, Spring Hinges	50
534, Loose Pin Butts, No. 1 A	70&10
534, Loose Pin Butts, No. 10 A	70&10&10
535, Loose Pin Butts, Nos. 50 and 60	60
536, Blind Hinges	65
537-543, Hinges and Gate Latches	55
544, 545, Barn-door Hangers	40&10
545, Barn-door Stays	40&5
546, Barn-door Rollers	40&10
546, Sliding-door Sheaves	55
547, Barn and Sliding-door Rail	40
548, 549, Pitcher Pumps	50
550-553, Steel Hammers	10
554, Saddlers' Punches	50
554, Tack and Nail Puller	50
554, Agricultural Screw-Driver	50
555-572, Flower Pot and Lamp Bracket	30&10
572-580, Shelf Brackets	30&10
581, Flower Basket	40
582-584, Twine Boxes	40&5
585, Erasers	40&5
585, Card Racks	40&5
586-593, Ink Stands	40&5
594-599, Paper Files	40&5
600, 601, Paper Clips	40
603, 604, Paper Weights	40&5

Carriage and Saddlery Hardware.

607, Common Carriage Bolts	A	75&10
607, Common Tire Bolts	A	No goods
608, Phil. Pat. Carriage and Tire Bolts	A	80
609, Eagle Carriage and Tire Bolts	A	75&5
610, Machine Bolts	A	75&15
610, Bolt Ends	A	75&15
611, Coach Screws	A	80
611, Gimlet-pointed Coach Screws	A	75&10
612, Sleigh-Shoe Bolts		70
612, Plow Bolts		40&5
612, Felloe Plates		33⅓
613, Iron Washers ⅝ and less	A	90¢ off list
613, Iron Washers, 7-16 and larger	A	85¢ off list
614, Square Nuts, ⅝ and less	A	90¢ off list
614, Square Nuts, 7-16 and larger	A	85¢ off list
615, Hexagon Nuts	A	10¢ off list
617, Tubular Lantern Holder		5
618, Carriage Bands		50&5
619, Carriage Knobs		30
620-624, Shaft, Hame and Whiffletree Tips		50
624-627, Neck Yoke Tips and Pole Tips		50
628, 629, Club Handles		50
630, Whip Sockets		33⅓
630, Inside Coach Handles		50
631, Spring Bar Bolts		50
632, Harness and Breeching Rings		No goods
632, Harness and Breeching Dees		33⅓
633, Buckles		No goods
633, 634, Cockeyes and Pad Trees		40
635, Terrets, Hooks and Swivels		40
636, Axle and Spring Bar Clips		60
637-651, Curry Combs		30

The Peck, Stow & Wilcox Company also issue the

REVISED LIST OF CASTERS,

adopted July 8, 1886, which we print in full:

Bedstead Casters.

All Iron, Copper Bronzed.

Nos.	101	102	103	104
Old Nos., heavy	1⅝ in. 1	1⅝ in. 2	1⅝ in. 3	2 in. 1
Diam. of wheel, in.	1⅜	1½	1⅝	1¾
Per set	$0.14	.16	.17	.19
Nos.	105	106	107	
Old Nos., heavy	2 in. 2	2 in. 3	2 in.	
Diam. of wheel, in.	1⅞	2	2¼	
Per set	$0.21	.23	.40	

Appletree Wood Wheel, Copper Bronzed.

Nos.	202	203	204	205	206
Old Nos.	1⅝ in. 2	1⅝ in. 3	2 in. 1	2 in. 2	2 in. 3
Diam. of wh'l. in	1½	1⅝	1¾	1⅞	2
Per set	$0.17	.18	.20	.22	.24

Porcelain Wheel, Copper Bronzed.

Nos.	301	302	303
Old Nos.	1⅝ in. 1	1⅝ in. 2	1⅝ in. 3
Diam. of Wheel, inches	1⅜	1½	1⅝
Per Set	$0.16	.18	.20
Nos.	304	305	306
Old Nos	2 in. 1	2 in. 2	2 in. 3
Diam. of Wheel, inches	1¾	1⅞	2
Per Set	$0.32	.24	.26

Brass Wheel, Copper Bronzed.

Nos.	401	402	403
Old Nos	1⅝ in. 1	1⅝ in. 2	1⅝ in. 3
Diam. of Wheel, inches	1⅜	1½	1⅝
Per Set	$0.36	.38	.53
Nos.	404	405	406
Old Nos	2 in. 1	2 in. 2	2 in. 3
Diam. of Wheel, inches	1¾	1⅞	2
Per Set	$0.60	.63	.70

In Paper Boxes of Six Sets each.

Globe Wheel Bedstead Casters.

All Iron, Japanned.

No. 501, 1¼ in. diameter of Wheel, per set $0.20
No. 502, 1⅜ in. diameter of Wheel, per set .30

Appletree Wood Wheel, Copper Bronzed.

No. 503, 1¼ in. diameter of Wheel, per set $0.25
No. 504, 1⅜ in. diameter of Wheel, per set .35

Porcelain Wheel, Copper Bronzed.

No. 505, 1¼ in. diameter of Wheel, per set $0.28
No. 506, 1⅜ in. diameter of Wheel, per set .40

In paper boxes of four sets each.

Plate Casters.

All Iron, Copper Bronzed.

Nos.	1	2	3	4
Diam. of Wheel, in.	⅞	1	1¼	1¼
Per set	$0.11	.13	.15	.17
Nos.	5	6	7	
Diam. of Wheel, in.	1¾	1 7-16	1½	
Per set	$0.20	.24	.32	

Porcelain Wheel, Copper Bronzed.

Nos.	11	12	13	14
Diam. of Wheel, in.	⅞	1	1¼	1¼
Per set	$0.13	.14	.16	.18
Nos	15	16	17	
Diam. of Wheel, in.	1¾	1 7-16	1½	
Per Set	$0.22	.26	.31	

Appletree Wood Wheel, Copper Bronzed.

Nos.	21	22	23	24
Diam. of Wheel, in	⅞	1	1¼	1¼
Per Set	$0.14	.16	.18	.21
Nos.	25	26	27	
Diam. of Wheel, in	1¾	1 7-16	1½	
Per set	$0.24	.30	.40	

Brass Wheel, Copper Bronzed.

Nos.	31	32	33	34
Diam. of wheel, in	⅞	1	1¼	1¼
Per set	$0.24	.28	.33	.42
Nos.	35	36	37	
Diam. of wheel, in.	1¾	1 7-16	1½	
Per set	$0.48	.60	.80	

All Brass, Brass Wheel.

Nos.	41	42	43	44
Diam. of wheel, in.	⅞	1	1¼	1¼
Per set	$0.40	.50	.60	.75
Nos.	45	46	47	
Diam. of wheel, in.	1¾	1 7-16	1½	
Per set	$0.90	1.10	1.80	

In paper boxes of six sets each.

Philadelphia Pattern Plate Casters.

All Iron, Copper Bronzed.

Nos.	601	602	603	604	605	606	607
Per set	$0.12	.13	.15	.17	.19	.22	.28

Iron Horn, Porcelian Wheel.

Nos.	611	612	613	614	615	616	617
Per set	$0.14	.15	.17	.19	.21	.24	.30

Iron Horn, Lignumvitæ Wheel.

Nos.	621	622	623	624	625	626	627
Per set	$0.16	.17	.19	.22	.24	.26	.40

Iron Horn, Brass Wheel.

Nos.	631	632	633	634	635	636	637
Per set	$0.25	.28	.34	.42	.44	.58	.78

Brass Horn, Porcelain Wheel.

Nos	641	642	643	644	645	646	647
Per set	$0.28	.29	.34	.40	.45	.52	.65

Brass Horn, Lignumvitæ Wheel.

Nos.	651	652	653	654	655	656	657
Per set	$0.30	.31	.36	.46	.48	.56	.70

Brass Horn, Brass Wheel.

Nos.	661	662	663	664	665	666	667
Per set	$0.37	.42	.51	.66	.70	.88	1.20

Iron Horn, Black Enameled Wheel.

Nos.	671	672	673	674	675	676	677
Per set	$0.16	.17	.19	.22	.24	.26	.40

In paper boxes of six sets each.

Straight Bracket Bedstead Casters.

All Iron, Copper Bronzed.

No. 701, 2⅛ inches diameter of Wheel, per set, $0.70
No. 702, 3 inches diameter of Wheel, per set, $0 90
No. 703, 4 inches diameter of Wheel, per set, $1.50

Appletree Wood Wheel, Copper Bronzed.

No. 704, 2⅛ inches diameter of Wheel, per set, $0.80
No. 705, 3 inches diameter of Wheel, per set, $1.00
No. 706, 4 inches diameter of Wheel, per set, $1.60

Lignumvitæ Wood Wheel, Copper Bronzed.

No. 707, 2⅛ inches diameter of Wheel, per set $0.90
No. 708, 3 inches diameter of Wheel, per set. 1.15
No. 709, 4 inches diameter of Wheel, per set. 1.75

In packages of one set each.

Piano-Forte Casters.

Long Wrought Pivot, Turned Wheel.

No. 18, 1⅛ inches diameter of Wheel, per set. $0.80
No. 19, 1⅜ inches diameter of Wheel, per set. .90

In packages of four sets each.

Round Shallow Socket Casters.

No. 8.—All Brass Wheel.

Inches	⅝	1	1⅛	1¼	1⅜	1½
Per set	$0.45	.55	.70	.87	1.00	1.20

No. 9.—All Brass, Porcelain Wheel.

Inches	⅝	1	1⅛	1¼	1⅜	1½
Per set	$0.33	.40	.55	.65	.75	.85

In paper boxes of six sets each.

Truck or Box Casters.

Stationary, Japanned.

Nos.	803	804	805	806
Inches	3	4	4½	5
Per doz	$3.12	4.30	4.92	11.00

Swivel, Japanned.

Nos.	903	904	905
Inches	3	4	4½
Per doz	$3.84	5.16	9.60

In packages of one-half dozen each.

Change list on pages 500, 501, 502, 503, 504, 505, 506, 507 in 1885 catalogue to correspond with above.

ARRANGEMENT OF HARDWARE STORES.

The accompanying illustration, Fig. 106, represents still another form of Nail Counter, in which it will be observed there are features entirely different from those possessed by any we have before described, We are indebted for the suggestion to W. B. Orcutt, Roscommon, Mich., who, in referring to it, says:

The upper bins open both front and back, and are filled from the back by raising 8 inches of the counter top and dumping the

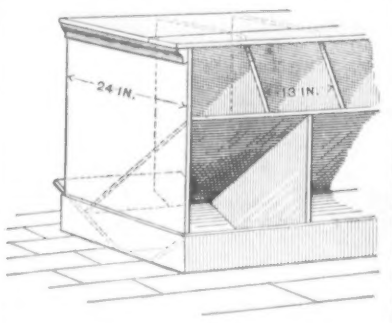


Fig. 106.—Rear View of Nail Counter.

keg directly into the bin. The strip of counter that is to be raised should be in sections, and may be hinged or simply have cleats fastened to it extending under the solid top. The lower bins can be used for Nails that are sold least, or for Strap and T Hinges.

A Hardwareman in Connecticut sends us drawings and description of the Steel Goods Rack which is represented in the accompanying illustration, Fig. 107, and its construction and advantages are alluded to in the following letter:

There seems to be a demand for a practical Steel Goods Rack. The one we have in use answers the purpose admirably, bringing the goods close together and keeping them in an orderly manner, while at the same time, for the room taken up, it will hold a large stock. We first built a counter 10½ feet long, 4¼ feet wide and 2 feet 4 inches high. This is divided underneath into 12 bins on each side, which are used for Picks, Mattocks, Barn Door Hangers and Rail, Strap and T Hinges, Grindstone Fixtures, &c. Above this counter is built a rack, as shown in Fig. 0. Part of its length, as indicated, is 5¼ feet high, for Hoes and Potato Hooks. The rest is 7 feet high, intended for Rakes, Manure Forks, &c., which have longer handles. On the top of this frame, at right angles with it, are nailed strips 2 x ⅞ inch, 31 inches long. The space between the strips where the goods are hung is 3 inches. Enough room is left between each pair of strips so that the goods will not interfere in handling them. Three feet below is another row of strips 1½ x ⅞ inch, 36 inches long, which keep the handles of the hanging goods together, and also separate them from the handles of the Shovels and Forks which stand on the ledge. The Hoe and Rake handles do not quite come down to the blades of the Shovels, &c., so that all the space is very economically used and the goods still kept separate. The space inside the frame, between the uprights, is divided by three shelves, which make an excellent place to keep Hoe, Rake and Fork Handles. On the ledge stand Shovels, Spading, Manure and Hay Forks. The goods being raised up from the floor prevents their being wet with water, which they are very apt to be if lower down. This Rack can stand in the center of the store and take up less valuable room than if the goods were hung against the wall, which is of more value for shelving. We find this a very convenient way of handling the goods, and it enables us to put our hand on anything our customer may want. It will hold more goods than anything you have shown us. With us it is such a complete success we are very enthusiastic over it, and thinking it will be appreciated by the trade submit the same to your notice.

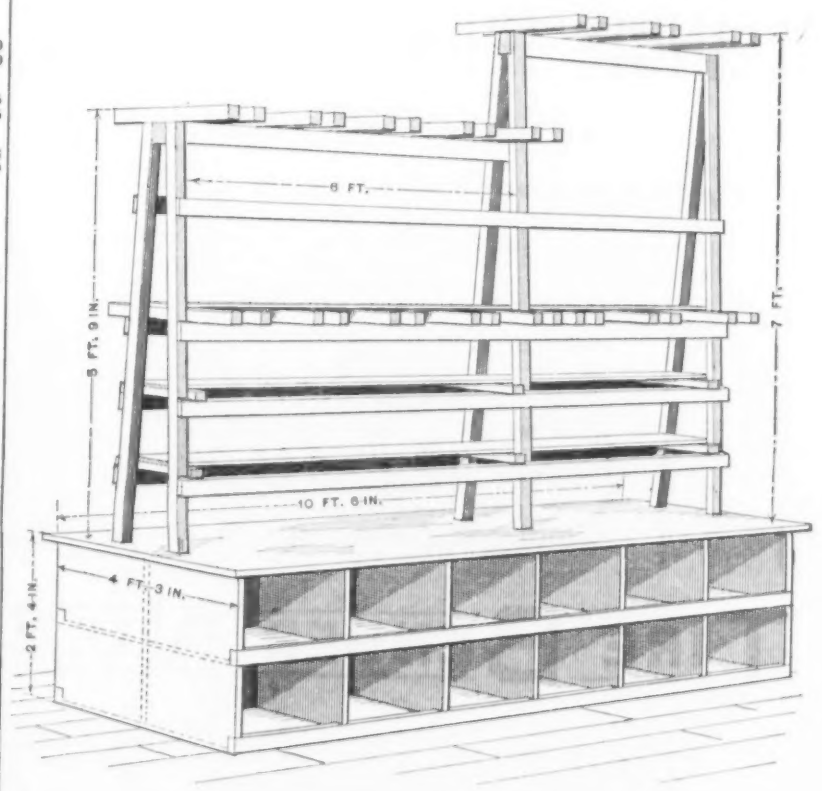


Fig. 107.—Steel Goods Rack.

The accompanying diagram, Fig. 108, represents a Coal Vase Rack, for the description of which we are indepted to S. O. Cummins, Bellaire, Ohio. It is made in a semicircular form, its width being 13 feet 2 inches, and its hight 4 feet 7 inches. It is intended to stand out in the store, giving the goods an effective display and economizing room. If desired casters can be placed under it, so as to facilitate its removal from one position to another. The circle is made of 1⅛-inch pine, and the shelves of ½-inch pine. The detailed measurements given in the diagram place this suggestion at the disposal of our readers, to whom, if desired, our correspondent will be pleased to give further information.

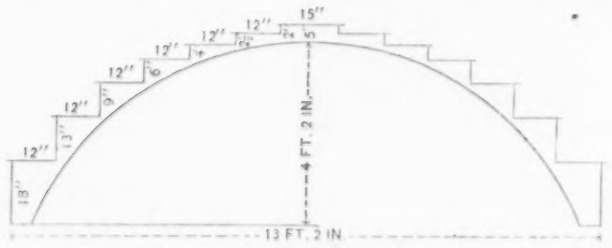
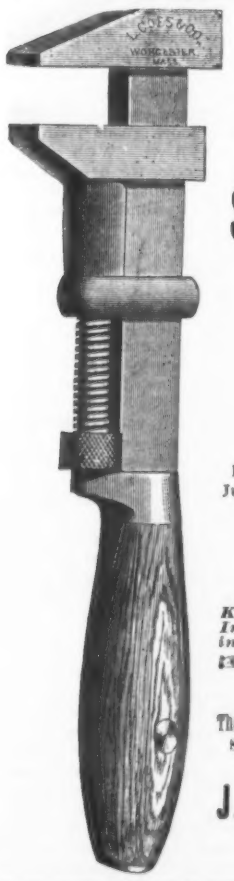


Fig. 108.—Coal Vase Rack.

The United States Senate has before it the outline of an additional provision to the existing treaty stipulations between this country and England. The addition is made especially for the purpose of extraditing dynamiters. It covers these and all persons guilty of embezzlement or larceny above the sum of $50, and burglary.

The Philadelphia Gas Company, we understand, are making arrangements to introduce gas into the yards of the Pennsylvania Railway Company to be used for fuel on locomotives.

The feeders in the nail mills of the Pittsburgh district are still discontented, claiming that they are not getting a fair share of the money for cutting. They were on the point of striking last week.



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GENUINE IMPROVED

Knife Handle

PATENT

Screw Wrenches

MANUFACTURED BY

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Worcester, Mass.

ESTABLISHED IN 1839.

Patented July 6, 1880. Patented July 8, 1884.

Registered March 31, 1874.

Sectional view illustrates our NEW KNIFE HANDLE, showing Malleable Iron Frame and Shank of Bar keyed into position.

☞ *Straight Bar, Extra LONG NUT FOR SCREW IN JAW.*

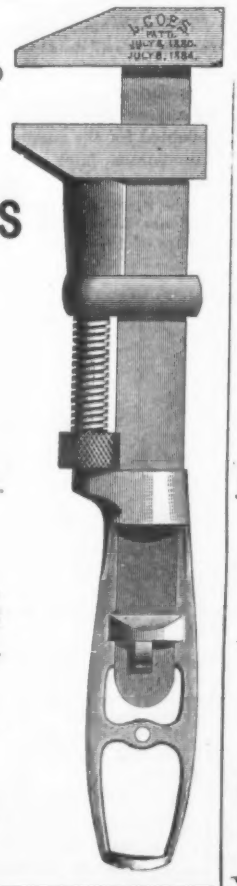
The Best Made and Strongest Wrench in the Market.

Send for Illustrated Price List and Circular.

J. C. McCARTY & CO.,

NEW YORK,

Sole Agents.



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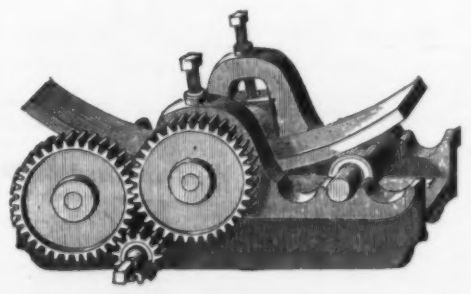
Nos. 20 to 26 Main Street,

CARPENTERSVILLE, KANE CO., ILL.

MANUFACTURERS OF

THIMBLE SKEINS.



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TIRE BENDER No. 3.

JACK SCREWS, SADIRONS,

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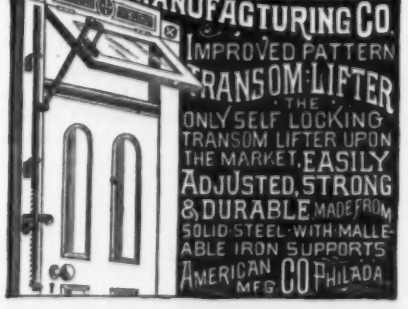
American Manufacturing Company,

PHILADELPHIA,



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Sliding Door Hangers,

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TRANSOM LIFTER,

ADJUSTABLE SAW VISES, SPOKE SHAVES, SPOKE TRIMMERS, BENCH HOOKS, HOLLOW AUGERS, EXCELSIOR CAN OPENERS,

Patent Braided Cotton CHALK LINES, &c.

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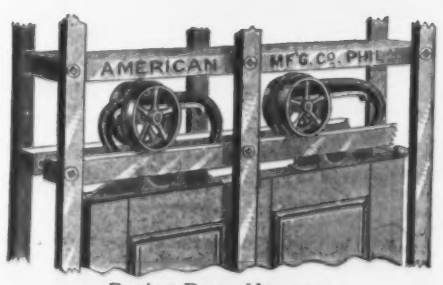

Parlor Door Hanger.

LLOYD & SUPPLEE HARDWARE CO.,

PHILADELPHIA.

"FLORENCE" LAMP STOVE.

Well Advertised, Sells Quick and Pleases Everybody.

Why not try them?

The ALFORD & BERKELE CO.

Selling Agents,

Pat. Nov. 14, 1876, & July 11, 1882. Others Pending.

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REFINED BAR IRON.

Also as a Specialty

Bolts, Nuts, Washers, Rivets,

LAG SCREWS, TURNBUCKLES, Rods and Forgings for Bridges and Buildings, &c., &c., &c.

JOHN N. POTT,

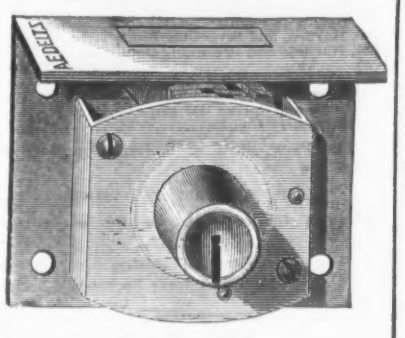
MINING ENGINEER,

Allentown, Pa.

SPECIALTY,

Exploration and Development of Coal Lands.

A. E. DEITZ.



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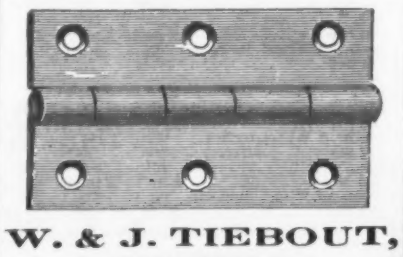
97 Chambers and 81 Reade Sts.,

NEW YORK.

Factory, BROOKLYN, E. D., N. Y.



W. & J. TIEBOUT,

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HARDWARE.

Nos. 16 & 18 Chambers Street,

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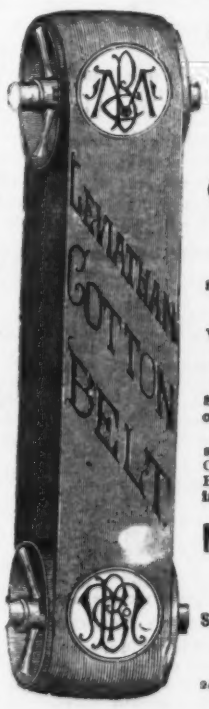

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Main Belting Co.,

Manufacturers of

THE LEVIATHAN

COTTON BELTING.

Unsurpassed for Strength, Durability and Cheapness.

Made to any Length, Width and Strength.

Main Driving Belts.

Guaranteed to Run Straight, Even Throughout.

No Cross Joints, Unaffected by Damp. Clings well to the Pulley. Has no equal. In fact, is THE BELT.

MAIN BELTING COMPANY,

S. W. cor. Ninth and Read Sts., Philadelphia.

Also

248 East Randolph St., CHICAGO.

THE CHAMPION LEVER

BLOWERS & FORGES

Are the Leaders of the World.

An entirely novel construction. "They have no equal." No Cog Wheels, Ratchets, Pawls, Gum Balls or other Friction Devices to wear out in a short time. Easy Motion, Powerful Blast, Noiseless and Durable. Guaranteed to give entire satisfaction. Write for catalogue and prices.

CHAMPION BLOWER & FORGE CO.,

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CHARCOAL PIG IRON

OF SUPERIOR QUALITY,

For Car Wheels, Chill Rolls, Chill Plows, Cylinders, Foundry and Machine Work.

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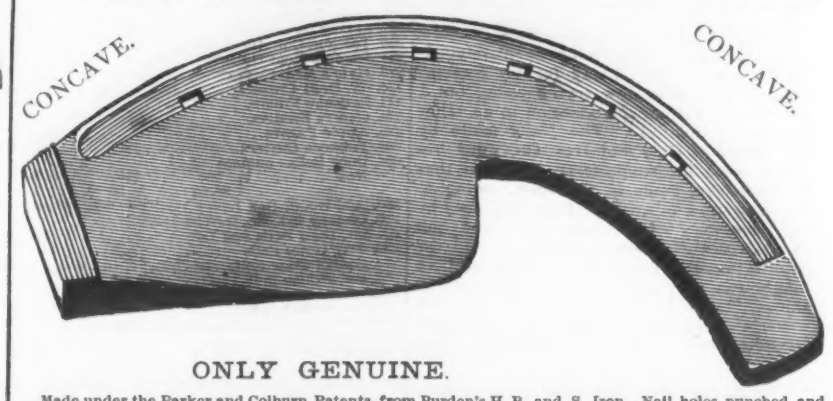
WATERBURY, CONN.

"GREENFIELD" FORGED OX SHOE.



ONLY GENUINE.

Made under the Parker and Colburn Patents, from Burden's H. B. and S. Iron. Nail holes punched, and every shoe perfect. The Parker and Colburn Patents cover broadly the dies in which the Shoes are forged. We are the *only* licensees, and all parties are cautioned against using either of the dies or the forging mechanism or processes so protected, as our rights under said patents will be fully maintained.

While we can furnish either the *Concave Shoe* with *One Calk*, or the *Flat Shoe* with *Two Calks*, we emphatically recommend the Concave, with one Calk, for the following reasons, viz.:

First.—Because the entire bearing of the shoe should come upon the *shell* of the hoof, and not upon the *ball* or tender part of the foot, as is necessarily the case with the flat shoe. This principle is recognized by all experts in the shoeing both of oxen and horses, and will prevent a tendency to sore-footedness.

Second.—Because by having one Calk only, the shoe can be cut off or lengthened and fitted more perfectly to the foot.

Third.—Because by having one Calk only, the shoer *can make the other Calk at any angle he desires.*

No. 1, Full Length, Concave, 5 inches, Weight, per Set of Eight Shoes, 3 pounds.
" 2, " " 5½ " " " " 3⅛ "
" 3, " " 6 " " " " 4 "
" 4, " " 6½ " " " " 5 "

Packed in boxes or kegs of 100 pounds, half each rights and lefts. Full weight, and no charge for packages

— PRICES. —

For orders of One Ton, or more, 9 cts. per pound.
" 1000 lbs. " 9½ "
For orders of 500 lbs., or more, 10 cts. per pound.
" less than 500 lbs., 10½ "

Terms, Net Cash, 30 days. Made only by

MILLERS FALLS CO.,

74 CHAMBERS ST., NEW YORK.

CHAMPLAIN Forged Horse Nails.

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NATIONAL HORSE NAIL CO.,

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HOT FORGED AND COLD HAMMERED POINTED MADE OF BEST NORWAY IRON AND WARRANTED.

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THE SEIDEL & HASTINGS CO.

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MANUFACTURERS OF

BEST CHARCOAL BOILER PLATES,

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ALSO BEST QUALITY HOMOGENEOUS STEEL PLATES.

We ask the special attention of the trade to our **C. H. No. 1 Boiler Plates,** which we manufacture expressly for the **Shells** of Steam Boilers and stamp **50,000 pounds T. S.** when desired. **One hundred and sixteen tests** of this iron, made during the last three years by the **U. S. Inspectors of Steam Vessels,** show an **average tensile strength** of **58,508 pounds** to the sectional square inch, and an **average reduction of area** of the fractured section of **30⅝ per centum.** Our prices are as low as the production of a good article will admit of.

POTTSVILLE IRON & STEEL CO.,

POTTSVILLE, PA., Manufacturers of all kinds of

STRUCTURAL STEEL AND IRON,

Viz., BEAMS, CHANNELS, TEES, ANGLES, PLATES AND BARS; Also STEEL AND IRON AXLES FOR FREIGHT AND PASSENGER CARS.

This Steel is manufactured by the CLAPP-GRIFFITHS process, and is specially adapted, in addition to the above, for Boiler and Bridge Rivets, Wire Rods, Nail Plates, &c., &c. Our Mild Steel is well adapted for use in place of the best quality of Wrought Iron; where a greater strength and ductility is required, it welds readily as Iron. Also Billets, Slabs of all sizes and any desired temper. Shafting of all sizes in stock, from which prompt shipments can be made.

Brewery, Malt and Ice House Construction a Specialty.

Duggan-Parker Hardware Mfg. Co.

ST. LOUIS, MO.

Tuyere Irons. Duggan Ball Valve Tuyere Irons. Blacksmiths' Tire Drills. Mandrills. Swage Blocks. Tire Benders. Washers. Picket Pins. Swivels. Rim Bands. Wrenches (S). Machine Wrenches. Adjustable Wrenches. Carriagemakers' Plain Clamps. Sash Weights. Sliding-Door Rail. Malleable Clevises. Half-Oval Rail.

PURE TURKISH EMERY.

WALPOLE EMERY MILLS,

South Walpole, Mass.

MANUFACTURING.

Iron and Steel.

Manager Flagler, of the National Tube Works, at McKeesport, Pa., has ordered work to be suspended on 28 new puddling furnaces being erected, awaiting the result of the difficulty between the firm and the employees over the action of the latter in joining the Amalgamated Association, which was noted in these columns last week. Mr. Flagler states that he will not employ a man that is a member of the Amalgamated Association, and that he will turn the new furnaces into steel furnaces if the trouble is not speedily settled.

The new mill of the Columbia Iron Company, at Columbia, Pa., has commenced operations. The mill is 80 feet in width and 100 feet in length, and contains two heating and six puddling furnaces, and will manufacture merchant bar, small size skelp iron and horseshoe iron. It will employ about 75 hands.

It is stated on good authority that large shipments of basic steel are now on the way from Germany to Pittsburgh. One of the cargoes now on the way is for a manufacturer of tubes and pipes, and is to be used for making natural gas pipes.

The Falcon Iron and Nail Company has closed negotiations with Cleveland, Brown & Co., of Cleveland, by which they secure a three-year' lease of the Russia rolling mill, at Niles, Ohio, with the privilege of purchase if they so desire. Arrangements are being made to have the plant overhauled, repairs made and the machinery placed in running order as soon as possible. The citizens of Niles are raising $1500 to present to the company in order to expedite matters and get the mill in operation.

The Pittsburgh Forge and Iron Works, at Pittsburgh, started up double turn in nearly all departments last week, with good prospects for a steady run.

The works of the Pennsylvania Construction Company, at Uniontown, Pa., are completed and in full operation. The company is filling orders for bridges from all parts of the State.

Messrs. Henry H. Yard, of New Jersey, and Charles H Krumbhaar, of Philadelphia, have been appointed receivers of the Columbia Liberty Iron Company, which has been operating the two furnaces in Virginia from which the company took its name.

M. V. Smith has received orders for 11 regenerative gas furnaces to be used in iron and steel mills. Of these six are for Cartwright, McCurdy & Co., of Youngstown, and one for the Trumbull Iron Company, of the same place. The Sharon Iron Company, of Sharon, get another, while the Belleville Iron and Steel Nail Company, of Belleville, Ill., have ordered two. The last one ordered was by the Glasgow Steel Company, of Pottsville, Pa.

At the rail mill of the Troy Steel and Iron Company 6 heaters and 24 helpers struck for an advance of 35 to 55 per cent. on the 12th. On the 17th the works were closed, but they started again pending the decision of the State Board of Arbitration, to which the matter has been submitted.

The rolling mill of the Bethlehem Iron Company, at Bethlehem, Pa, owing to a pressure of orders, is to be run day and night from midnight each Sunday until midnight on the following Saturday. That is, the only time the mill will be idle will be during the twenty-four hours which constitute Sunday. The change goes into effect to-day, when the rolls will be kept going until midnight.

The new steel plant being erected by the Wheeling Steel Company, at Benwood, W. Va., will be ready to commence operations in a few days.

Seaman, Sleeth & Black, proprietors of the Phœnix Roll Works, at Pittsburgh, have recently shipped to the Wheeling Steel Works, at Benwood, W. Va., two of their patent semi-steel chill rolls weighing 10 tons each. They inform us that they are very busy at present and are running full in all departments.

The Missouri Car and Foundry Company, of St. Louis, have placed all their contracts for the machinery to be used in the rebuilt portion of their works. The 500-horse-power Corliss engine employed in the mill, which they thought would have to be replaced, will be repaired and brought into service again.

The Allentown Rolling Mill Company, at Allentown, Pa., are entering largely into the manufacture of bridges, and have just been awarded the contracts for six iron bridges for streams in Luzerne County.

Machinery.

J. P. Witherow, of Pittsburgh, has received an order from the Bellevi le Nail Works, of Belleville, Ill., for 1500 horse power of the Heine safety boiler. They are similar to those now being erected in the mill of Shoenberger & Co. and Oliver Bros. & Phillips, at Pittsburgh. Mr. Witherow informs us that his works are running fuller now than at any previous time for years.

Brown Bros., tubing and boiler works, at Waterbury, Conn., are putting in a 100-horse-power Harris-Corliss engine and three 80-horse-power Bigelow boilers. They have added one story to a portion of their works, 96 x 40, for their house boiler factory, and when all the changes are effected their facilities will be about doubled.

The Dueber Watch Case Company, of Newport, Ky., are to remove their establishment to Canton, Ohio, in connection with the Hampden Watch Works Company, of Springfield, Ill. (which concern Mr. Dueber recently purchased), in consideration of $100,000, 20 acres of land and exemption from taxation for 10 years. The Dueber & Hampden Companies collectively employ about 1100 men.

The Brown & Van Arsdale Mfg. Company have sold to the Chicago and Evanston Railroad eight acres of ground at Grand Crossing, Ill., upon which they will at once erect their new works for the manufacture of seamless thimble skeins, silver polished sad-irons, tinsmiths' tools, hub-reaming machines and general machine work. The following are the dimensions of the ground plans for the new works: Blacksmith-shop, 60 x 125 feet; machine-shop, 75 x 100; both two stories high; warehouse, 77½ x 125; foundry 100 x 180; and boiler and engine room, 64 x 40 feet. There will be two boilers 60 and 25 horse-power each, and two engines of 80 horse-power. There will be an additional boiler for use in case of accident to the engines. Two cupolas having a capacity of 50 tons per day will be placed in the foundry, and there will be track communications with the Illinois Central Railroad to facilitate shipping contracts with the Lake Shore and Pittsburgh & Ft. Wayne roads. The company expect to have their new plant ready for occupancy by October 1, and will employ 300 men. The cost will be $50,000.—*Industrial World.*

The Kingsland & Ferguson Mfg. Company, of St. Louis, Mo., have averaged a shipment of agricultural machinery to Mexico almost every week this season, and have several orders from that country in work at the present time. Included in the foreign shipments they will shortly make will be a considerable quantity of machinery for Brazilian account.

The Diamond Emery Wheel and Machine Company, of Providence, R. I., are busier than for years.

The Smith, Beggs & Rankin Machine Company, of St. Louis, Mo., note an improvement in orders, and are especially pleased with the promising state of the mining machinery trade.

The Brown & Sharpe Mfg. Company, of Providence, R. I, are now running a few more men than ever before in their experience.

The Gardner Governor Works, at Quincy, Ill., report having had an unprecedented rush for large-size governors and angle valves, the following being a few of a large number shipped during the months of June and July: St. Louis Iron and Machine Works, St. Louis, Mo., one 9 inch governor and angle-valve; Hartman Steel Company, Beaver Falls, Pa., one 9-inch governor; Watertown Steam Engine Company, Watertown, N. Y., one 9-inch governor and angle-valve; Jos. Blettner & Co., Cincinnati, Ohio, two 8-inch governors; Smith, Beggs & Rankin Machine Company, St. Louis, Mo., 8, 7 and 5 inch governors; two 10 inch angle-valves to Davies & Blacker & Co., Manistee, Mich., and 40 3½-inch governors to J. B. Ford & Co.'s Plate Glass Works, Tarentum, Pa.; the latter is probably the largest order ever placed in this country for governors for the sole use of one concern. They report their gross trade for the first six months of 1886 as 50 per cent. greater than for the corresponding period last year, and the prospect good for fall trade.—*Industrial World.*

The plant of the Gillespie Tool Company, on Twenty-first and Railroad streets, Pittsburgh, has been sold to Lewis N. Ireland and Jas. E. Hughes, of Petrolia, Pa., for the sum of $30,000.

The Fisher Foundry and Machine Company, Pittsburgh, have just completed two hydraulic presses, one of 65 tons and the other of 125 tons capacity, to be used by the National Tube Works for straightening pipe up to 24 inches in diameter. Also one hydraulic testing machine of 60 tons inside capacity for the same company.

The Union Switch and Signal Company, of Pittsburgh, have received an order for furnishing the yards at Holmesburg, N. J., on the United Railroads of New Jersey with its interlocking apparatus.

The Lawrence Machine Shop, of Lawrence, Mass., have just received the following very flattering testimonial from James B. Francis, agent of the locks and canals on the Merrimac River, at Lowell. "Lowell, Mass., July 8, 1886: Lawrence Machine Shop, Lawrence, Mass.—The three centrifugal pumps, class 'B,' 6, 5 and 4 inches respectively, with fittings, which you furnished the Union Water Power Company last season, for the repairs of their upper dam, at the outlet of Lake Mooseluckmaguntic, Oxford County, Me., were used throughout the work, and proved to be satisfactory in every respect, and their performance came fully up to your representations."

The Weatherford Castor Oil Company, Weatherford, Tex., recently organized, have purchased the machinery for the mill and commenced work on a stone building 54 x 107 feet.

The M. C. Bullock Mfg Company, Chicago, Ill., report recent shipments as follows: One Little Champion diamond drill, with complete outfit, to the City of Mexico; one Climax diamond drill, with complete outfit for underground prospecting, to the Lake Superior Iron Company, Ishpeming, Mich.; one straight-line engine to Carson, Pirie, Scott & Co., of Chicago; one Little Champion diamond drill, with outfit, to the Hudson River Ore and Iron Company, Burden, N. Y.; one special No. 6 Lane's patent portable hoist for a silver mine in South America.

The Hoppes Mfg. Company, John J. Hoppes, president and manager, recently organized at Springfield, Ohio, are building new works and putting in machinery to manufacture the Hoppes feed-water heater and lime extractor.

The Eddy Valve Company, Waterford, N. Y., report trade fair. They are employing from 70 to 80 men.

Meech & Co., of Cleveland, Ohio, have just shipped a complete plant of mining machinery to the Tintic District, Utah.

The Sullivan Machine Company, Claremount, N. H., are making some 10 different sizes of their new heading drill, or Underground Prospecting Drill. The demand for these heading drills from mining localities has given quite an impetus to the business of the Sullivan Company, in addition to the regular manufacture of their diamond drill quarrying machines.

The Babcock & Wilcox Company have lately placed boilers as follows: Brooklyn Bridge, second order, 208 horse-power; Westerly, R. I., Water Works, 90 horse-power; Lehigh Coal and Navigation Company, Pennsylvania, 208 horse-power; Edison Lamp Company, Newark, N. J., second order, 104 horse-power; Excelsior Needle Company, Torrington, Conn., 61 horse-power; Huguenot Mills, Greenville, S. C., second order, 50 horse-power; Welham Plantation, Louisiana, 240 horse-power; Marks Bros., Philadelphia, second order, 45 horse power; Bird Coleman Furnaces, Cornwall, Pa., second order, 960 horse-power; Columbus Steel Company, Columbus, Ohio, 480 horse-power; Benedict & Burnham Mfg. Company, Waterbury, Conn., second order, 156 horse-power; Cardenas Refinery, Cardenas, Cuba, third order, 208 horse-power; Mt. Houmas Plantation, Louisiana, 240 horse-power; Southwood Plantation, Louisiana, 272 horse-power; Dakota Apartment House, New York City, third order, 240 horse-power; Edison Lamp Company, Newark, N. J., third order, 104 horse-power.

The Star Machine Company, of Buffalo, N. Y., report being full of orders at the present time for their new portable forge and blacksmiths' hand-blower.

Miscellaneous.

George Westinghouse, Jr., president of the Philadelphia Natural Gas Company, of Pittsburgh, will within a few days exhibit in the United States Court a bill against a number of the natural gas companies of Pittsburgh, and ask that they be restrained from using his patents for the safe transportation of gas, for providing for the escape of surplus gas, patent joints and other appliances for the safe handling of the fluid.

The glass factory of Hogan, Evans & Co., of Pittsburgh, after an idleness of some weeks, will resume operations on the 1st of August.

The Westinghouse Electric Company, of Pittsburgh, have received an order for a 2000-light electric plant for a western city. The plant will include everything in the way of boilers, engines, dynamos, wires, &c., and the Stanley pattern of incandescent lights. The same company recently received an order for a 2000-light plant for Schenectady, N. Y., where the Stanley incandescent lights will replace gas in the street lamps. This order has greater significance from the fact that Edison, the great manufacturer of electrical appliances and inventor of an incandescent light, will shortly remove his large works from New York City to Schenectady. The Westinghouse Company are now bidding on plants for electric lights for about 10 cities of different sizes in both the East and West. These range from 2000 to 10,000 lamps in each town, and the company will, in case they get the contracts, furnish everything necessary for successful operation.

Messrs L. Halsey Williams, T. M. Guffey and other gentlemen, of Pittsburgh, are about to engage in the development of some natural-gas lands in Kentucky. The tract lies northeast of Louisville about 25 miles, and consists of over 30,000 acres. Superficial examinations have shown the most unmistakable signs of gas.

A. W. Mellon, of Pittsburgh, has secured 27 tracts of valuable coal lands in Mount Pleasant township, in the Connellsville coke region. The consideration was $116,000. It is reported that Mr. Mellon intends to erect some extensive coke works, but that gentleman denies the rumor.

The Duggan-Parker Hardware Mfg. Company, of St. Louis, resumed operations on the 15th inst. after a shut down lasting six weeks.

Americans are high in favor at the Korean capital, as appears from a letter dated at Seoul May 14. Lieutenant Wilmer, U. S. N., has been selected to attend to naval affairs, and United States officers are expected to instruct the army. Foreign intercourse is facilitated by three lines of steamers, two of them sustained by Japanese capital, while a third is in the joint management of Germans and Chinese. Seoul is connected by telegraph with the rest of the world through Pekin. A French treaty will be welcomed, in addition to those with other powers, as a sort of barrier to Chinese encroachments, as that power claims to exercise sovereignty to an extent which creates much annoyance. Judge Denny, former United States consul at Shanghai, is now the adviser of the Government, but finds himself embarrassed by the errors of those who have preceded him, arising from extravagant expenditure. It was a German recently dismissed who induced American merchants to send the San Pablo to Korea, with her cargo of machinery and implements, to be used as a sort of museum and bait for Korean trade. The cargo was landed at Shanghai, consigned to his agents, and no more has been heard of it in Seoul. It would please Koreans to see their trade in the hands of Americans.

The Naval Committee of the House have agreed to reduce the aggregate appropriation from $6,400,000 to $3,500,000. The bill as amended provides for the completion of the unfinished monitors, the construction of armored vessels, one cruiser and two first-class torpedo-boats, appropriates $75,000 for experiments with and manufacture of torpedoes, and $150,000 for the equipment of navy yards for construction work.

As an experiment a piece of iron was recently rolled in the new Falcon mills at Niles, Mich, to ascertain the extreme thinness it was possible to obtain. The result was a sheet about the substance of writing paper—in fact, 150 sheets would be required to constitute 1 inch of substance.

Hardware Novelties.

The Acme Gate Roller.

Huntington Beard, Fayetteville, N. Y., is offering to the trade the Acme Gate Roller which he manufactures. On small gates, 13 feet and under, the No. 1 roller, shown in Fig. 1, is used, together with two iron catches to hold the gate in place; 16 feet or double gates require both rollers, No. 1 and No. 2, the latter being placed on a post at one side of the gateway, as shown in Figs. 2 and 3. The axle of the No. 1

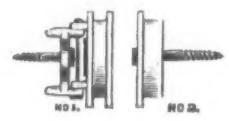


Fig. 1.—General View of Rollers.

roller is hinged to a lug which in turn is fastened to the inner post with a coach screw. In the smaller farm gates where only this one roller is necessary the gate is held in place and kept from being pushed out by means of two catches or slides of cast iron, which hold bars above and below the roller. To open the gate it is simply necessary to slide it back so that it clears the outer post and then push it open in the ordinary manner, the catches turning with

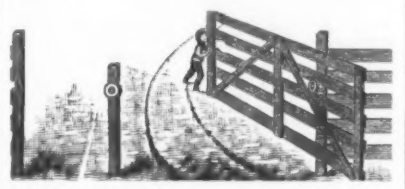


Fig. 2.—Shows Gate Open.

the gate as they are hinged in the same general way as the roller. For the larger gates there is a post sunk at one side of the gateway, as shown in the cuts, and to which is fastened the stationary roller, No. 2. On this second post there are two iron catches, also stationary, which hold the gate and prevent it from being accidentally pushed out of place. Where it is only necessary for foot passengers or cattle to pass the gate is pushed one side as far as the post in the manner indicated in Fig. 3. To open the

Fig. 3.—Shows Gate Partly Open.

gate wider it is raised off the stationary roller and pushed back to the post, finally being swung around in the usual way, as shown in Fig. 2. The rollers are made of cast iron, and have chilled bearings, which gives a smooth surface and prevents rapid wear. The device appears to be simple in construction and easy of application to a gate made of proper size and with the bars spaced the right distances. The No. 1 rollers are made in two sizes, 6 and 9 inches, and the No. 2 in one size, 6 inches.

New Pattern Crosscut Saws.

The accompanying illustrations, Figs. 1, 2 and 3, represent the new pattern Diamond, Electric and Champion Tooth Saws, which

Fig. 1.—New Diamond Tooth.

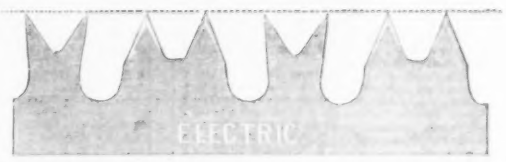


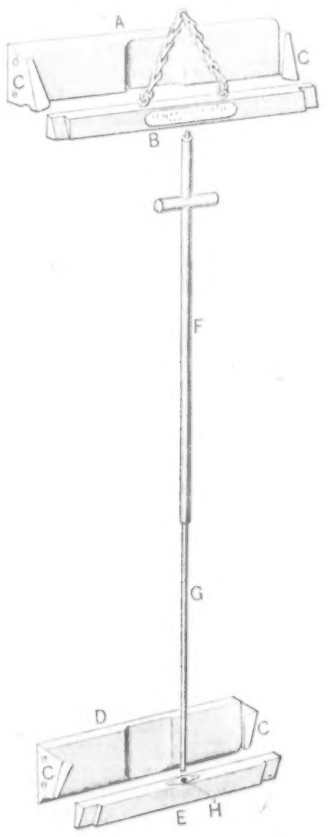
Fig. 2.—New Electric Tooth.

Fig. 3.—New Champion Tooth.

old style Champion and Diamond tooth will still be manufactured, but orders will be filled with the new style unless otherwise specified.

The United Service Trousers Stretcher.

J. C. McCarty & Co., 97 Chambers street, New York, as sole agents for this country, are placing on the market the United Service Trousers Stretcher, the construction of which is shown in the illustration. The device, which is an English invention, but patented both here and abroad, may be briefly described as consisting of a pair of clamps for holding the trousers, the clamps being constantly pushed apart by a spring, thus stretching the trousers and removing the baggy appearance at the knees. The clamps are of wood, the pieces A and D having brass guides, C, at each end. The trousers are laid flat on A and D, which are removed the proper distance apart, after which the wedges B and E are inserted above the cloth and pushed down into the inclined guides C, thus holding the cloth firmly in position. The compound rod which hold the clamps apart consists of a tube, F, inside of which is a spiral spring. The other part, G, is simply a rod which fits inside of F and bears upon the spring. The wedge pieces E and B have in the middle of each a hole, as shown at H. After placing the trousers in the clamps the spring-bar is compressed and its



The United Service Trousers Stretcher.

two ends inserted in the wedges, thus keeping a constant tension upon the cloth and completely removing, it is said, the bag at the knees of the trousers. To the upper wedge, B, there is a short chain attached by which it may be hung up when in use.

Adjustable Nail-Holding Attachment.

The cuts which are herewith given represent this article, which is being put on the market by Herring & Sweasy, 70 and 72 Reade street, New York. The attachment is represented in Fig. 1, and the manner in which it is applied is shown in Fig. 2. It will be seen that there is a tapering slot on

Fig. 1.—Nail-Holding Attachment.

the side of the attachment by which a nail may be held in place, as shown in Fig. 3, so as to be struck in the desired place without the use of the fingers of the left hand holding it while it is being driven. It will be readily understood that after a nail has been thus started the hammer is withdrawn, so that it is free to drive the nail home in the usual manner. The spur on the opposite side of the hammer is designed for use in hanging the hammer up on the woodwork within easy and convenient reach of the operator. The length of the attachment is 2¾ inches, and it is described as forged from cast steel, heavily nickel plated and fully

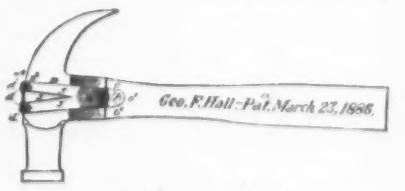


Fig. 2.—Attachment Applied to Hammer.

warranted. The utility of an attachment of this kind in nailing siding and various other work where one hand is required to hold the piece in position is alluded to, as well as the

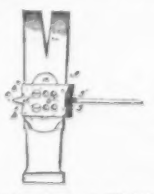


Fig. 3.—Attachment Holding Nail.

incidental advantage that when applied to a hammer the wedge cannot work out or the head come off.

The Philadelphia *Record* upbraids the authorities for allowing freight discrimination on the part of the Pennsylvania Railroad until the grain traffic of the port has been reduced one-half within a few years and steamers are compelled to go elsewhere to find cargoes. Since the first of the year Philadelphia shipmasters and agents have sent 125 vessels in ballast from her wharves and towed them to other ports.

Current Hardware Prices, July 21, 1886.

HARDWARE.

Ammunition.
Caps, Percussion, ₩ 1000—
Hicks & Goldmark's
F. L. Waterproof, 1-10's....50¢ } dis 25 %
E. B. Trimmed Edge, 1-10's....65¢
E. B. Ground Edge, Central Fire, 1-10's 70¢
Double Waterproof, 1-10's....$1.40
Musket Waterproof, 1-10's....54¢
G. D....28¢
S. B....30¢
Union Metallic Cartridge Co.
F. C. Trimmed....50¢ } dis 25 %
F. L. Ground....65¢
Cen. Fire Ground....70¢
Double Waterproof....$1.40
Double Waterproof, in 1-10's....$1.40
S. B. Genuine Imported....45¢
Eley's E. B....56¢
Eley's D Waterproof, Central Fire....$1.60
Cartridges—
Rim Fire Cartridges....dis 60&2 %
Rim Fire Military Cartridges....dis 15&2 %
Cen. Fire Cartridges, Pistol and Rifle....dis 40&2 %
Cen. Fire Cartridges, Military & Sporting..dis 30&2 %
Blank Cartridges, except 22 and 32 cal., an additional 10 % over above discounts.
Blank Cartridges, 22 cal....$1.50, dis 2 %
Blank Cartridges, 32 cal....$3, dis 2 %
Primed Shells and Bullets....dis 25&2 %
B. B. Caps, Round Ball....$1.60, dis 2 %
B. B. Caps, Conical Ball, Swaged....$1.75, dis 2 %
Primers—
Berdan Primers, all sizes, and B. L. Caps (for Sturtevant Shells)....90¢, dis 2 %
All other Primers, all sizes....$1.10, dis 2 %
Shells—
Paper Shot Shells, 1st & 2d or S. G. qual. dis 25&5&2 %
Selbold's Combination Shot Shells....dis 25&10&2 %
Paper Shot Shells, Club, Rival, Climax. dis 40&5&2 %
Paper Shot Shells, Star Brand....dis 50&5&2 %
Brass Shot Shells, 1st quality....dis 60&2 %
Brass Shot Shells, Club, Rival & Climax...dis 65&2 %
Wads—
U. M. C. & W. R. A.—B. E., 11 up....$2.00 } dis 20&2 %
U. M. C. & W. R. A.—B. E., 9&10....2.30
U. M. C. & W. R. A.—B. E., 7&8....2.60
U. M. C. & W. R. A.—P. E., 11 up....3.10
U. M. C. & W. R. A—P. E., 9&10....4.00
U. M. C. & W. R. A.—P. E., 7&8....490
Eley's B. E., 11 up....$1.75
Eley's P. E., 11 @ 20....$2.80

Anvils.
Eagle Anvils....₩ ℔ 10¢, dis 20 @ 20&5 %
Wright's....9½¢
Armitage's Mouse Hole....9¢
Armitage Mouse Hole, Extra....11½¢
Trenton....9½¢
Wilkinson's....9½¢@10¢
J. & Riley Carr. Patent Solid....11@11½¢
Anvil Vise and Drill—
Millers Falls Co....$18.00, dis 20 %
Cheney Anvil and Vise....dis 25 %
Allen Combined Anvil and Vise....$3, dis 40&10 %

Augers and Bits.
Douglass Mfg. Co. } ...dis 60&10 %
New Haven Copper Co.
Wm. A. Ives & Co.
Humphreysville Mfg. Co.
French, Swift & Co.
Connecticut Valley Mfg. Co
Snell's....dis 60@60&5 %
Cook's, Douglass Mfg. Co....dis 55 %
Cook's, New Haven Copper Co...dis 50&10@50&10&5 %
Ives' Circular Lip....dis 60 %
Patent Solid Head....dis 30 %
C. E. Jennings & Co., No. 10, extension lip....dis 40 %
C. E. Jennings & Co., No. 30....dis 60 %
C. E. Jennings & Co., Auger Bits, in fancy boxes, ₩ set, 32½ quarters, No 5, $5; No. 30, $3....dis 20 %
Lewis' Patent Single Twist....dis 45 %
Russell Jennings' Augers and Bits....dis 25 %
Imitation Jennings Bits (new list). dis 50&10@50&10&5 %
Car Bits, Snell Mfg. Co....dis 40&10&10 %
Car Bits, New Haven Copper Co....dis 50&10 %
L'Hommedieu Car Bits....dis 15 @ 20 %
Snell Mfg. Co.'s Jennings' Bits (new list)....dis 50&5 %
Forstner Pat. Auger Bits....dis 10 %
Hollow Augers—
Ives' } dis 25&10 @ 25&10&5 %
French, Swift & Co.
Douglass'
Expansive Bits—
Clark's small, $18; large, $26....dis 35 @ 35&5 %
Ives' No. 4, per doz., $60....dis 35 @ 40 %
Swan's....dis 40 %
Ansonia....dis 25 %
Steer's, No. 1, $26; No. 2, $22....dis 35 %
Bonney's Adjustable ₩ doz. $48....dis 40&10 %
Stearns' Adjustable ₩ doz. $48....dis 20&10 %
Ives' Expansive, each $4.50....dis 45 @ 50 %
Universal Expansive, each $4.50....dis 20 %
Wood's....dis 25 @ 25&10 %
Gimlet Bits—
Common....₩ gross $3.00 @ $3.2
Diamond....₩ doz. $1.10, dis 25&10 %
"Bee"....dis 25 %
Double Cut, Shepardson's....dis 45 %
Double Cut, Ct. Valley Mfg. Co....dis 30&10 %
Double Cut, Hartwell's, ₩ gro, $6.50....dis 10 %
Double Cut, Douglass'....dis 40 %
Double Cut, Ives'....dis 50&10@50&10&5 %
Holt's Patent....dis 40&10 %
Syracuse....dis 30 @ 30&5 %
Bit Stock Drills—
Morse Twist Drills....dis 50 %
Standard....dis 50&10 %
Cleveland....dis 50&10 %
Syracuse....dis 50&10 %
Williams' or Holt's....dis 50&10&10 %
Ship Augers and Bits—
L'Hommedieu's....dis 15 @ 20 %
Watrous's....dis 15 @ 20 %
Snell's....dis 15 @ 20 %
Snell's Ship Auger Pattern Car Bits....dis 15 @ 20 %

Awl Hafts.
Sewing, Brass Ferrule....$3.50 ₩ gross—dis 40&10 %
Patent Sewing, Short....$1.00 ₩ doz—dis 40&10 %
Patent Sewing, Long....$1.20 ₩ doz.—net
Patent Peg, Plain Top....$10.00 ₩ gross—dis 45&10 %
Patent Peg, Leather Top....$12.00 ₩ gross—dis 45&10 %

Awls, Brad Sets, &c.
Awls, Sewing, Common....₩ gross $1.70—dis 35 %
Awls, Shouldered Peg....₩ gross $2.45—dis 40@40&10 %
Awls, Patent Peg....₩ gross 63¢—dis 40@40&10 %
Awls, Shouldered Brad....$2.70 ₩ gross—dis 35 %
Awls, Handled Brad....$7.50 ₩ gross—dis 45 %
Awls, Handled Scratch....$7.50 ₩ gross—dis 35&10 %
Awls, Socket Scratch....$1.50 ₩ doz—dis 25 @ 30 %

Awl and Tool Sets.
Aiken's Sets, Awls & Tools...₩ doz. $10.00—dis 50&10 %
Fray's Adj. Tool Handles, No. 1, $12; No. 2, $18 } dis 25 @ 25&10 %
Miller's Falls Adj. Tool Handles, No. 1, $12; No. 2, $18
Henry's Combination Haft....₩ doz. $6
Brad Sets, No. 42, $10.50, No. 48, $12.50...dis 70&10&5 %
Brad Sets, Stanley's Excelsior, No. 1, $7.50. } dis 30&10 %
Brad Sets, Stanley's Excelsior, No. 2, $4.00.
Brad Sets, Stanley's Excelsior, No. 3, $5.50.

Axes.
Makers' Brands—
First quality....₩ doz $6.50 @ $7.00
Others....₩ doz $6.00 @ $6.50
Special brands....₩ doz $5.50 @ $6.00

Axle Grease.
Fraser's, in bulk....Keg ₩ ℔, 4¢; Pail, ₩ ℔, 5¢ net
Frasers, in boxes....₩ gross $9.50
Dixon's Everlasting, in bxs., ₩ doz., 1 ℔; $1.20; 2 ℔, $2
Dixon's Everlasting....10-℔ pails, each, 85¢
Lower grades, special brands....₩ gro $5.50 @ $7

Axles.
Nos. 1 to 6....3¾¢; Short bed, 4½¢
Nos. 7 to 18....dis 60&5 @ 60&10 %
Nos. 19 to 22....dis 70&5 %
Nos. 23 to 26....dis 60&5 %
National Wrought Steel Tubular Self-Oiling:
Standard Farm (1 to 5) and Special Farm (A1 to A5)
Less than 10 sets....dis 33⅓ %
Over 10 sets....dis 33⅓&5 %
X Strong Exp. (6 to 9), & XX Strong Truck (10 to 16):
Less than 10 sets....dis 10 %
Over 10 sets....dis 10&5 %

Bag Holders.
Sprengle's Pat., ₩ doz $18....dis 60 %

Balances.
Spring Balances....dis 50 %
Common 24 ℔....₩ doz., $1.50—dis 50 %
Chatillon's Spring Balances....dis 50 %
Chatillon's Circular Spring Balances....dis 60 %

Bells.
Hand—
Light Brass....dis 75&10 @ 75&10&5 %
Extra Heavy....dis 65&10 @ 70 %
White Metal....dis 70 @ 70&5 %
Silver Chime....dis 25&10&5 %
Globe (Cone's Patent)....dis 25&10 %
Door—
Gong, Abbe's....dis 25&10 @ 35 %
Gong, Yankee....dis 40&10 %
Gong, Barton's....dis 40&10 @ 50 %
Crank, Taylor's....dis 25&10 %
Crank, Brooks'....dis 50&10&2 %
Crank, Cone's....dis 10 %
Crank, Connel's....dis 20&10 %
Lever, Sargent's....dis 60&10 %
Lever, Taylor's Bronzed or Plated....net
Lever, Taylor's Japanned....dis 25&10 %
Lever, R. E. M. Co.'s....dis 50&10&2 %
Pull, Brook's....dis 50&10&2 %
Pull, Western....dis 25&10 %
Cow—
Common Wrought....dis 60&10 %
Western....dis 20&10 %
Western, Sargent's list....dis 70&10 %
Kentucky "Star"....dis 20&10 %
Kentucky, Sargent's list....dis 70&10 %
Dodge, Genuine Kentucky, new list...dis 70@70&5 %
Nos. 0 1 1½ 2 3 4 5 6 7 Hog
$12.00 10.00 9.00 8.00 6.00 5.00 4.00 3.00 2.50 5.00
Texas Star....dis 50&10 @ 50&10&5 %
Call....dis 40@40&5 %
Farm Bells....₩ ℔, 2¾ @ 3¢
Steel Alloy Church and School Bells....dis 40 %

Bellows.
Blacksmiths'....dis 50&10 @ 60 %
Molders'....dis 50@50&5 %
Hand Bellows....dis 50@50&5 %

Belting, Rubber.
Standard....dis 70&5 @ 70&10 % } dis 5 % cash.
Extra....dis 60@60&10 %
N. Y. B. & P. Co., Standard...dis 60&10 %
N. Y. B. & P. Co., Extra....dis 50&10 %
Cleveland Rubber Co., Extra..dis 60&10 %

Bench Stops.
Hotchkiss's....₩ doz $5.00—dis 10 @ 10&10 %
Weston's, per doz No. 1, $10; No. 2, $9...dis 25&10&5 %
McGill's....₩ doz $3—dis 10 %
Morrill's....₩ doz $9—dis 50 %

Bit Holders.
Extension, Barber's....₩ doz $15.00—dis 40&5 %
Extension, Ives'..₩ doz $20.00—dis 40&10 @ 40&10&5 %
Diagonal....₩ doz $24.00—dis 40 %
Angular....₩ doz $24.00—dis 40&5 %

Blind Adjusters.
Domestic....₩ per doz $3.00—dis 33⅓ %
Excelsior....₩ doz $10.00—dis 50&10&2 %
Washburn's Self-Locking....dis 20 @ 20&10 %

Blind Fasteners.
Mackrell's....₩ doz pairs, $1.00—dis 20@20&10 %
Van Sand's Screw Pattern....$15 ₩ gro.—dis 50&10 %
Van Sand's Old Pattern....$15 ₩ gro.—dis 50&10 %
Washburn's Old Pattern....$9 ₩ gro. net
Merriman's....new list, net
Salisbury & Austin No. 2008....$9 ₩ gro. net
Security Gravity....$9 ₩ gro. net

Blind Staples.
Barbed, ⅛ in. and larger....₩ ℔ 8 @ 8½¢ net
Barbed, ⅛ in....₩ ℔ 9 @ 9½¢ net

Blocks.
Tackle Blocks, &c, list Ap. 17, '85. dis 50&10@50&10&5 %
Reed Mfg. Co. Self-Lubricating....dis 50 %

Bolts
Door and Shutter—
Cast Iron Barrel, Square, &c....dis 70 @ 70&5 %
Cast Iron Shutter Bolts....dis 70 @ 70&5 %
Cast Iron Chain (Sargent's list)....dis 65&10 %
Ives' Patent Door Bolts....dis 55 %
Wrought Barrel....dis 70 @ 70&5 %
Wrought Square....dis 70 @ 70&5 %
Wr't Shutter, all Iron, Stanley's list....dis 60&10 %
Wr't Shutter, Brass Knob, Stanley's....dis 40&10 %
Wrought Shutter, Sargent's list....dis 60&10 %
Wrought Sunk Flush, Sargent's list....dis 55&10 %
Wrought Sunk Flush, Stanley's list....dis 40&10&5 %
Wrought B. K. Flush, Com'n Stanley's list. dis 55&10 %
Carriage—
Com. list June 10, '84....dis 80 @ 80&5 %
Genuine Eagle, list Oct., '84....dis 75 @ 75&5 %
Phila. pattern, list Oct. 7, '84...dis 75&10@75&10&5 %
R. B. & W., old list....dis 70&5 %
Tire—
Common, list Feb. 28, 1883....dis 65&10 %
P. C. B. & N. Co., Empire, list Feb. 28, 1883. dis 65&10 %
P. C. B. & N. Co., Keystone, Phil. list, Oct. '84...dis 82½ %
P. C. B. & N. Co., Norway, Phil. list, Oct. '84....dis 80 %
Am. S. Co., Norway, Ph'l., list Oct. 16, '84....dis 80 %
Am. S. Co., Eagle, Phil., list Oct. 16, '84....dis 82½ %
Am. S. Co., Philadel. list, Oct. 16, '84....dis 82½&5 %
Am. S. Co., Bay State, list Feb. 28, '83....dis 65&10 %
R. B. & W., Philadel. list Oct. 16, 1884....dis 80&5 %
R. & E. Mfg. Co....dis 65&10 %
Stove and Plow—
Stove....dis 70 %
Plow....dis 65 %
Am. S. Co. Stove, Annealed....dis 70 %
R. B. & W., Plow....dis 50&5 %
R. B. & W., Stove....dis 70&5 %
Machine....dis 80 %
Bolt Ends....dis 80 %

Borax.....₩ ℔ 8¼¢ @ 8¾¢

Boring Machines.
Without Augers.	Upright.	Angular.
Douglas	$5.50	$6.75....dis 50 %
Snell's, Rice's Patent	5.50	6.75. dis 40&10&10 %
Jennings	5.50	6.75. dis 45@45&10 %
Other Machines	2.35	2.75....net
Phillips' Pat., with Augers	7.00	7.50....net

Bow Pins
Humason, Beckley & Co.'s, Nos 1 and 2—dis 60&10 @ 60&10&5 %
Humason, Beckley & Co.'s other Nos..dis 70 @ 70&10 %
Sargent & Co.'s....$17 and $18, dis 60&10 %
Peck, Stow & W. Co....dis 50&10 @ 50&10&5 %

Braces.
Backus, Nos. 110 to 114 and 31 to 33..dis 60&5@60&10 %
Backus, Nos. 6, 8, 12, 14....dis 60&10&5 %
Backus, Nos. 16, 18, 20, 29, 7, 9, 11....dis 70&10&5 %
Barber's, Nos. 10 to 16....dis 50 %
Barber's, Nos. 30 to 33....dis 50 %
Barber's, Nos. 40 to 63....dis 50&10 %
Spofford's....dis 50&10 %
Ives' New Haven....dis 70 @ 70&5 %
Ives' Novelty....dis 60&5 @ 60&10 %
Ives' Novelty, Improved....dis 60&5 @ 60&10 %
Ives' Spofford....dis 60 @ 60&5 %
Common Ball, American....8½ in., $1.30; 10 in. $1.50
Bartholomew's, Nos. 25, 27, 30..dis 50&10@50&10&10 %
Bartholomew's, Nos. 117, 118, 119....dis 65 @ 65&5 %
Amidon's Barker's Imp'd....dis 60&10&5 %
Amidon's Ratchet....dis 70 @ 70&5 %
Amidon's Corner Brace....dis 40 @ 40&10 %
Amidon's Universal....8 in., $1.90; 10 in., $2.10
Amidon's Buffalo Ball....8 in., $1.35 @ $1.40
P. S. & W....dis 50&10 %

Brackets.
Shelf, plain, Sargent's list....dis 55&10 @ 55&10&10 %
Shelf, fancy, Sargent's list....dis 60&10 @ 60&10&10 %
Reading, plain....dis 60&10 @ 60&10&10 %
Reading, Rosette....dis 65&10 @ 65&10&10 %

Bright Wire Goods.
Regular list....dis 75&10 %

Broilers.
Henis' Self-Basting.. { Inch.... 9 10 9 x 11 / Per doz.... $4.50 5.50 6.50

Buckets.—See Well Buckets and Pails.

Bull Rings.
Union Nut Co....dis 55 %
Sargent's....dis 66⅔&10 %
Hotchkiss' low list....dis 30 %
Humason, Beckley & Co.'s....dis 70&10 %
Peck, Stow & W. Co.'s....dis 50&10 %
Elrich Hdw. Co., White Metal, low list....dis 50 %

Butts.
Brass—
Wrought Brass....dis 80 @ 80&10 %
Cast Brass, Tiebout's....dis 40 %
Cast Brass, Corbin's F. Joint....dis 33⅓&10@33⅓&10&10 %
Cast Brass, Loose Joint....dis 33⅓&10@33⅓&10&10 %
Cast Iron—
Fast Joint, Narrow....dis 60&5 @ 60&10&5 %
Fast Joint, Broad....dis 60&5 @ 60&10&5 %
Loose Joint } dis 70&10@70&10&5 %
Loose Joint, Japanned
Loose Joint, Jap. with Acorns
Parliament Butts
Mayer's Hinges
Loose Pin, Acorns
Loose Pin, Acorns, Japanned
Loose Pin, Acorns, Jap, Pltd. Tips
Wrought Iron—
Fast Joint Narrow....dis 65&2 %
Fast Joint, Lt. Narrow....dis 65&2 %
Fast Joint, Broad....dis 65&2 %
Loose Joint, Broad....dis 65&5&2 %
Table Butts, Back Flaps, &c....dis 65&2 %
Inside Blind, Regular....dis 65&2 %
Inside Blind, Light....dis 65&2 %
Loose Pin, Wrt....dis 65&5&2 %
Loose Pin, Light....dis 65&2 %
Bronzed Wrought Butts....dis 40&2 %
Blind Butts—
Parker....dis 75&2 %
Palmer....dis 50&5&10 %
Seymour....dis 70&2 %
Lull & Porter....dis 80 %
Nicholson....dis 45&10 %
Huffer....dis 50 %
Clark's, Nos. 1, 3, 5....dis 80&5 @ 80&10 %
Sargent's, Nos. 1, 3, 5, 11, 13....dis 75&10 %
Sargent's, No. 12....dis 75&10&10 %
Reading's Gravity....dis 75&10 %
Shepard's "Noiseless" Nos. 50, 60, 65, 45 and 55....dis 75&10 @ 80 %
Shepard's Champion Gravity, No. 75....dis 80&5&5 %
Shepard's "Gravity." Nos. 1, 3 and 5....dis 80 %
Shepard's Steamboat Gravity, No 10. dis 80&10&2½ %
Shepard's "O. S." and "Acme" Lull & Porter....dis 75&10&5 %
Shepard's "Queen City" Reversible....dis 75&10 %
Clark's Improved Shutter Hinge, Nos. 0, 1, 1½, 2, 2½, 3....dis 70 @ 70&5 %
North's Automatic Blind Fixtures, No. 2, for Wood, $10.50; No. 3, for Brick, $13.50....dis 25&2 %

Butcher's Cleavers.
Humason & Beckley Mfg. Co....dis 30&5 @ 30&10 %
Bradley's....dis 25 @ 30 %
Beatty's....dis 33⅓&5 %
1 2 3 4 5 6 7 8
$16.50 19.00 21.50 24.00 27.00 30.00 33.50 36.50
New Haven Edge Tool Co.'s....dis 40 %
Albertson Mfg. Co....dis 33⅓ @ 33⅓&5 %

Calipers.—See Compasses.

Can Openers.
Messenger's Comet....₩ doz $3.00, dis 25 %
American....₩ gross $3.00
Duplex....₩ doz 25¢, dis 15 @ 20 %
Lyman's....₩ doz $3.75, dis 20 %
No. 4, French....₩ doz $2.25, dis 55 @ 60 %
No. 5, Iron handle....₩ gross $6.00, dis 45 @ 50 %
Eureka....₩ doz $2.50, dis 10 %
Sardine Scissors....₩ doz $7.00, dis 55 %
Star....₩ doz $5.00, dis 25&5 %
Sprague, No. 1, $2; 2, $2.25; 3, $2.50....dis 60@60&10 %
World's Best, ₩ gross, No. 1, $12.00; No. 2, $24.00; No. 3, $36.00....dis 50&10 %
Universal....₩ doz $3.00, dis 35&5 %
Domestic....₩ doz $2.50, dis 45 %
Champion....₩ doz $2.00, dis 50 %

Cards.
Horse and Curry....dis 10 @ 10&10 %
Cotton....New list, Aug., 1883, dis 10 %
Wool....""" dis 10 %

Carpet Stretchers.
Cast Steel, Polished....₩ doz $3.25
Cast Iron, Steel Points....₩ doz 80¢
Socket....₩ doz $1.75
Bullard's....dis 25 @ 25&10 %

Carpet Sweepers.
Bissell No. 5....₩ doz $17.00
Bissell No. 7 New Drop Pan....₩ doz $19.00
Bissell No. 12 Hall Sweeper....₩ doz $36.00
Grand Rapids....₩ doz $27.00
Crown Jewel....No. 1, $18; No. 2, $19; No. 3, $20
Magic....₩ doz $15.00
Jewel....₩ doz $17.00
Mystic....₩ doz $17.00
Cottage....₩ doz $15.00
Garland....₩ doz $19.00
Queen....₩ doz $16.00
Queen, with band....₩ doz $18.00
King....₩ doz $30.00
Weed Improved....₩ doz $18.00
Hub....₩ doz $16.00
Cog Wheel....₩ doz $16.00
Church....each $3.00

Cartridges.—See Ammunition.

Casters.
Bed }
Plate
Shallow Socket
Deep Socket
Yale Casters, list May, 1884....dis 25&10@25&10&5 %
Yale, Gem....dis 60@60&5 %
Martin's Patent (Phœnix)....dis 45&10 @ 50 %
Payson's Anti friction....dis 60 %
"Giant" Truck Casters....dis 10 @ 10&5 %
Stationary Truck Casters....dis 45&10

Cattle Leaders.
Humason, Beckley & Co.'s....dis 75 %
Sargent's....dis 66⅔&10 %
Hotchkiss....dis 30 %
Peck, Stow & W. Co....dis 50&10 %

Chain.
Trace, 6½-10-2, Eng. sizes....₩ pair 79¢ } dis 50&10 @ 60 %
Trace, 6½-10-3, Eng. sizes....₩ pair 70¢
Trace, 7-10-2, Eng. sizes....₩ pair 86¢
Log, Fifth, Stretcher, and other fancy Chains, list Nov. 1, 1884....dis 50&10 @ 60 %
American Coil 3-16 ¼ 5-16 ⅜ 7-16 ½ ⅝ ¾ 1 to 1¼
In cask lots, $8.75 5.50 4.30 3.75 3.65 3.50 3.40 3.35 3.30
American Coil, less than cask lots, add ½¢ ₩ ℔.
German Coil, list of June, 1881....dis 55&5@60 %
German Halter Chain, list of June, 1884. dis 55&5@60 %
Covert Halter, Hitching and Breast....dis 50&2 %
Covert Traces....dis 40&2 %
Oneida Halter Chain (old list)....dis 45 %
Galvanized Pump Chain....₩ ℔ 5½¢ @ 6¢
Jack Chain, Iron....dis 75&10 @ 75&10&5 %
Jack Chain, Brass....dis 75 @ 75&10 %

Chalk.
White....₩ gro 55¢
Red....₩ gro 75¢
Blue....₩ gro 90¢
White Crayons....₩ gro 12¢ @ 12½¢

Chalk Lines.—See Lines.

Cherry Seeders....₩ doz $3

Chisels.
Socket Framing and Firmer—
Witherby and Douglas } dis 75 @ 75&5 %
P., S. & W.
New Haven and Middlesex
Buck Bros....dis 30 %
Merrill....dis 60&10&10 %
L. & I. J. White....dis 30 %
Tanged Firmers....dis 50 @ 50&5 %
Tanged Firmers, Butcher's....$4.75 @ $5.00
Tanged Firmers, Spear & Jackson's....$5.00 to £
Tanged Firmers, Buck Bros....dis 30 %

Chucks.
Morse's Beach Patent....each, $8.00, dis 20 %
Morse's Adjustable....each, $7.00, d's 20 @ 20&5 %
Danbury....each, $6.00, dis 30 @ 30&5 %
Syracuse, Balz Pat....dis 25 %

Clamps.
Providence Tool Co.'s Wrought Iron....dis 25 %
Adjustable, Gray's....dis 20 %
Adjustable, Lambert's....dis 20 %
Adjustable, Snow's....dis 40&5 %
Adjustable, Hammer's....dis 15 %
Adjustable, Stearns'....dis 20&10 %
Cabinet, Sargent's....dis 66⅔&10 %
Carriage Makers', Sargent's....dis 66⅔&10 %
Eberhard Mfg. Co....dis 40&5 @ 40&10 %
Warner's....dis 40&10 %
Saw Clamps....See Vises

Clips.
Axle and Spring Bar, Norway Iron....dis 65&2 %
Common Axle Clips....dis 70 %
Wrought-Iron Felloe Clips....₩ ℔ 5½¢
Steel Felloe Clips....₩ ℔ 5¢

Cockeyes....dis 50 %

Cocks, Brass.
Hardware list....dis 55&10&2 %

Coffee Mills.
Board and Box....dis 45&10&2 %
Selsor's Patent....$9.50, $10.50, dis 25 %
American, Enterprise Mfg. Co....dis 20&10@30 %
The "Swift," Lane Bros....dis 20&10 %
Webb's Patent....dis 45 %

Compasses, Dividers, &c.
Compasses, Calipers, Dividers....dis 70@70&10 %
Bemis & Call Co.'s Dividers....dis 60&5 %
Bemis & Call Co.'s Compasses & Calipers....dis 50&5 %
Bemis & Call Co.'s Wing & Inside or Outside. dis 50&5 %
Bemis & Call Co.'s Double....dis 60 %
Bemis & Call Co.'s (Call's Patent Inside)....dis 30 %
Excelsior....dis 50 %
Cook's Extension....dis 20 @ 20&5 %
J. Stevens & Co.'s Calipers and Dividers....d's 25&10 %

Coopers' Tools.
Bradley's....dis 20 %
Barton's....dis 20@20&5 %
L. & I. J. White....dis 20&5 %
Albertson Mfg. Co....dis 25 %
Beatty's....dis 33⅓ @ 40 %
Sandusky Tool Co....dis 30 @ 30&5 %

Corkscrews.
Humason & Beckley Mfg. Co....dis 40 @ 40&10 %
Clough's Patent....dis 33⅓ @ 33⅓&5 %
Howe Bros. & Hulbert....dis 35 %

Corn Knives and Cutters.
Bradley's....dis 10 %
Wadsworth's....dis 25 %

Cradles.
Grain....dis 40&5&2 %

Crow Bars.
Cast Steel....₩ ℔ 3¾¢
Iron, Steel Points....₩ ℔ 3¼ @ 3½¢

Curry Combs.
Fitch's....dis 50&10 @ 50&10&10 %
Rubber....₩ doz $10.00, dis 25 @ 30 %
Perfect....dis 50 %

Curtain Pins.
Silvered Glass....net
White Enamel....net

Cutlery.
Beaver Falls and Booth's....dis 33⅓ %
Wostenholme....$7.75 @ $8.00 to £

Dividers—See Compasses.

Dog Collars.
Embossed Gilt, Pope & Stevens' list....dis 30&10 %
Leather, Pope & Stevens' list....dis 40 %
Brass, Pope & Stevens' list....dis 40 %

Door Springs.
Torrey's Rod, regular size....₩ doz $1.30
Gray's....₩ gro, $30.00, dis 20 %
Bee Rod....₩ gro, $20.00, dis 20 %
Warner's No. 1, ₩ doz. $2.50; No. 2, $3.30. dis 40&10@50 %
Gem (Coil), list April 19, 1886....dis 10 %
Star (Coil), list April 19, 1886....dis 20 %
Victor (Coil)....dis 60 @ 60&10 %
Champion (Coil)....dis 60&10 @ 60&10&10 %
Philadelphia....5 in., $5.00; 8 in., $7.75, dis 30 %
Cowell's....No. 1, ₩ doz $18.00; No. 2, $15.00, dis 50 %
Rubber, complete....₩ doz $4.50, dis 55&10 %
Hercules....dis 50 %
Shaw Door Check and Spring....dis 25 @ 30 @ 35 %
Elliott's Door Check and Spring....dis 25 %

Drawing Knives.
Witherby and Douglas } dis 75 @ 75&5 %
P., S. & W.
New Haven and Middlesex
Merrill....dis 60&10&10 %
Watrous....dis 15&10 @ 25 %
L. & I. J. White....dis 20&5 %
Bradley's....dis 35 %
Adjustable Handle....dis 20 @ 25 %
Wilkinson's Folding....dis 25 @ 25&5 %

Drills and Drill Stocks.
Blacksmiths'....each, $1.50 @ $1.60
Blacksmiths' Self-Feeding....each, $7.50, dis 20 %
Breast, P. S. & W....dis 40&10 %
Breast, Wilson's....dis 30&5 %
Breast, Millers Falls....each, $3.00 dis 25 %
Breast, Bartholomew's....each, $2.50, dis 25&10 @ 40 %
Ratchet, Merrill's....dis 20 %
Ratchet, Ingersoll's....dis 25 %
Ratchet, Parker's....dis 20 @ 20&5 %
Ratchet, Whitney's....dis 20&10 %
Ratchet, Weston's....dis 20@25 %
Ratchet, Moore's Triple Action....dis 25 @ 30 %
Whitney's Hand Drill, Plain, $11.00; Adjustable, $12.00....dis 20&10 %
Wilson's Drill Stocks....dis 10 %
Automatic Boring Tools....each, $1.75 @ $1.85
Twist Drills—
Morse....dis 50 %
Standard....dis 50&10 %
Syracuse....dis 50&10 %
Cleveland....dis 50&10 %
Williams....dis 50&10&10 %

Drill Bits.—See Augers and Bits.
Drill Chucks.—See Chucks.
Dripping Pans.
Per ℔....5¢ @ 5½¢

Egg Beaters.
Dover....₩ doz., $2.50
National....₩ doz $4.50, dis 33⅓ %
Family (T. & S. Mfg. Co.)....₩ gro, $17.00@$18.00
Standard....₩ gro, $12.00
Kingston....₩ gro, $9.00
Acme....₩ gro, $8.00
Triumph (T. & S. Mfg. Co.)....₩ gro, $10.50@$11.50
Advance No. 1....₩ gro $10.50
Advance, No. 2....₩ gro $10.00
Bryant's....₩ doz $2.00
Ayres' Spiral....₩ gro $5

Electric Bell Sets.—Wollensak's....dis 20 %

Emery.	No. 4 to 46 gr.	No. 54 to 150 gr.	Flour, CF, F, FF.
Kegs, ₩ ℔	4 ¢	4 ¢	2½¢
½ kegs, ₩ ℔	4¼¢	4¼¢	2¾¢
¼ kegs, ₩ ℔	4¾¢	5 ¢	3¼¢
10-℔ cans, ₩ ℔	7 ¢	7 ¢	5 ¢

Enameled and Tinned Ware.—See Hollow-Ware.

Escutcheon Pins.
Iron and Brass, list Nov. 11, 1885....dis 50&10 %

Escutcheons.
Door Lock....Same discounts as Door Locks
Brass Thread....dis 60 @ 60&10 %
Wood....dis 25 %

Faucets.
Fenn's....dis 40 %
Bohren's Patent Rubber Ball....dis 25 %
Fenn's Cork Stops....dis 33⅓ %
Star....dis 60 @ 60&5 %
Frary's Patent Petroleum....dis 40&10&2 %
West's Patent Key....dis 50 %
Anchor Lock....dis 45 %
Metallic Key, Leather Lined....dis 55&10 @ 60&10 %
Cork Lined....dis 70 @ 70&10 %
J. Sommer's Best Block Tin Key....dis 40 %
J. Sommer's Cork Lined, 1st quality....dis 50 %
J. Sommer's Diamond Lock....dis 40 %
Self-Measuring, Enterprise...₩ doz $36.00—dis 20&10 %
Self-Measuring, Lane's....₩ doz $36.00—dis 25&10 %
Self-Measuring, Victor....₩ doz $36.00—dis 25&10 %

Felloe Plates....₩ ℔ 6 @ 6½¢

Files.
Domestic—
Best brands, list Dec. 1, 1885...dis 60&10@60&10&5 %
Lower Grade, list Dec. 1, 1885....dis 70@70&5 %
J. B. Smith Co. Screw Tang...dis 55&10@55&10&10 %
New Am. File Co., Pat. Tapers....dis 50 %
Heller's Horse Rasps....dis 50&10 %
Imported—
J. & Riley Carr....List, April 1, 1883, dis 15 %
J. & Riley Carr Horse Rasps....dis 10 %
Moss & Gamble....List April 1, 1883, dis 15 %
Butcher....Butcher's list, dis 20 %
Stubs....Stubs list, dis 25 @ 30 %

Fluting Machines.
Knox, 4½-inch Rolls....$3.25 each } dis 35 %
Knox, 6-inch Rolls....$3.60 each
Eagle, 3½-inch Roll....$2.15, dis 35 %
Eagle, 5½-inch Roll....2.85, dis 35 %
Crown, 4½ in., $3.50; 6-in, $4.00; 8-in., $6.50 each, dis 35 %
Crown Jewel....6-in., $3.50 each, dis 35 %
American, 5-in., $3; 6-in., $3.40; 7-in., $4.50 each, dis 35 %
Domestic Fluter....$1.50 each, net
Geneva Hand Fluter, White Metal..₩ doz $12, dis 25 %
Crown Hand Fluter, Nos. 1, $15; 2, $12.50; 3, $10. dis 30 %
Shepard Hand Fluter, No. 85....₩ doz $15.30, dis 40 %
Shepard Hand Fluter, No. 110....₩ doz $11, dis 40 %
Shepard Hand Fluter, No. 95....₩ doz $8, dis 40 %
Clark's Hand Fluter....₩ doz $15.00, dis 33⅓ %
Combined Fluter and Sad Iron...₩ doz $15.00, dis 30 %
Buffalo....₩ doz $10.00 dis 10 %

Fluting Scissors....dis 45 %

Fly Traps.—Paragon....₩ doz $2
Balloon....₩ doz $1.75

Forks.
Hay, Manure, &c., Asso. list....dis 60&10&10 %
Hay, Manure, &c., Phila. list....dis 60 @ 60&5 %
Plated, see Spoons.

Freezers, Ice-Cream.
Leading Goods....dis 60&2 @ 60&5 %

Fruit and Jelly Presses.
Enterprise Mfg. Co....dis 20&10 @ 33⅓ %
Henis....₩ gross $45, ₩ doz $4 @ $4.50

Fry Pans.
Central Stamping Co.'s list....dis 33⅓&2 @ —%

No.	0	1	2	3	4	5	6	7	8
₩ doz.	$1.50	1.75	2.00	2.25	2.50	2.75	3.25	3.75	4.25

Sidney Shepard & Co....dis 40&2 %
Acme....dis 60 %
Iron Clad Mfg. Co.'s list....dis 70 %

No.	0	1	2	3	4	5	6	7	8
₩ doz.	$3.00	3.75	4.25	4.75	5.25	6.00	7.00	8.00	9.00

Gauges.
Marking....dis 60&10 %
Wire, low list....dis 10&10 %
Wire, Wheeler, Madden & Co....dis 10 %
Wire, Morse's....dis 50 @ 50&5 %
Wire, Brown & Sharpe's....dis 10 %

Gimlets.
Nail and Spike....dis 50&10&5 %
"Eureka" Gimlets....dis 40&10 %
"Diamond" Gimlets....dis 40&10 %
Double Cut, Shepardson's....dis 45 %
Double Cut, Ives'....dis 50 %
Double Cut, Douglass'....dis 40 %
"Bee"....₩ gross $12, dis 25 %

Glue Pots.
Tinned and Enameled....dis 35@35&5 %
Family, Howe's "Eureka"....dis 40 %
Family, L. F. & C.'s "Handy"....dis 45 %

Grindstone Fixtures.
Sargent's Patent....dis 70&10 %
Reading Hardware Co....dis 33⅓&10 %

Hack Saws.—See Saws.

Halters.—Covert's Pat. ½ Jute....dis 50&10&2 %
Covert's Hemp Horse and Cattle Tie....dis 50&10&2 %
Covert's Jute Horse and Cattle Ties....dis 60&2 %
Meneely's Pat. Adjustable Hemp and Jute..dis 50&10 %
Meneely's Hemp and Jute Horse and Cattle Ties....dis 50&10 %

Hammers.
Maydole's....List Dec. 1, 1885, dis 25 @ 25&10 %
Cheney's, new list, March, 1883....dis 20&10 %
Hartford Hammer Co.'s Nail Ham's....dis 25&10@35 %
Buffalo Hammer Co....dis 30 @ 35 %
C. Hammond & Son....dis 40&10 @ 50 %
Humason & Beckley....dis 25 %
Verree....dis 5 %
Magnetic Tack, Nos. 1, 2, 3, $1.25, 1.50 and 1.75. dis 30&10 %
Nelson Tool Works....dis 40&10 %
Warner & Nobles....dis 10 %
Yerkes & Plumb, A. E. Nail....dis 40&5 %
Peck, Stow & Wilcox....dis 40 %
Sargent's....dis 33⅓&10 %
Wilkinson's Smiths'....10½¢ @ 11¢ ₩ ℔
Heavy Hammers and Sledges...dis 60&10 @ 60&10&5 %

Hand Cuffs and Leg Irons.
Providence Tool Co., Hand Cuffs, $15.00 ₩ doz..dis 10 %
Providence Tool Co., Leg Irons, $25.00 ₩ doz....dis 10 %
Tower's....dis 25 %
Daley's Improved Hand Cuffs: 2 Hands, Polished, ₩ doz, $48; Nickeled, $57; 3 Hands, Polished, ₩ doz, $72; Nickeled, $84....dis 20 %

Handles.
Iron, Wrought or Cast.—
Door or Thumb.
Nos.... 0 1 2 3 4
Per doz.. $0.90 1.00 1.18 1.35 1.50....dis 60&10&10 %
Roggin's Latches....₩ doz. 30¢ @ 35¢
Bronze Iron Drop Latches....₩ doz. 70¢ net
Jap'd Store Door Handles—Nuts, $1.62; Plate, $1.10; no Plate, $0.88....net
Barn Door....₩ doz. $1.40, dis 10&10 %
Chest and Lifting....dis 70 %
Handles, Wood—
Saw and Plane....dis 40&10 %
Hammer, Hatchet, Axe, Sledge, &c....dis 25 @ 30 %
Brad Awl....₩ gross $2.00
Hickory Firmer Chisel, assorted....₩ gross 4.50 } dis 40
Hickory Firmer Chisel, large....₩ gross 5.00
Apple Firmer Chisel, assorted....₩ gross 5.00
Apple Firmer Chisel, large....₩ gross 6.00
Socket Firmer Chisel, assorted....₩ gross 3.00
Socket Framing Chisel, assorted....₩ gross 5.00
J. B. Smith Co.'s Pat. File....dis 50 %
File, assorted....₩ gross 2.75 } dis 40 @ 40&10 %
Auger, assorted....₩ gross 5.00
Auger, large....₩ gross 7.00
Patent Auger, Ives'....dis 25 %
Patent Auger, Douglass'....₩ set $1.25 net
Patent Auger, Swan's....₩ set $1.00 net
Hoe, Rake, Shovel, &c....dis 50&10 %
Cross Cut Saw Handles—
Atkins' No. 1 Loop, ₩ pair, 30¢; No. 3, 22¢; No. 2 and No. 4 Reversible, 22¢.
Boynton's Loop Saw Handles....50¢, dis 60 %
Champion....15¢
Disston's Loop and Cut Saw Handles....20¢

Hangers.
Barn Door, old patterns....d's 60&10&10 @ 70 %
Barn Door, New England....dis 60&10&10 @ 70 %
Samson Steel Anti-Friction....dis 55 %
Orleans Steel....dis 55 %
Hamilton Wrought Wood Track....dis 55 %
U. S. Wood Track....dis 65 %
Champion....dis 60&10 %
Rider and Wooster, Medina Mfg. Co.'s list....dis 70 %
Climax Anti-Friction....dis 55 %
Climax Steel Anti-Friction....dis 50 %
Zenith for Wood Track....dis 55 %
Reed's Steel Arm....dis 40 %
Challenge....dis 50 %
Sterling Improved (Anti-Friction)....dis 65&10 %
Victor, No. 1, $15; No. 2, $16.50; No. 3, $18....dis 50&2 %
Cheritree....dis 50&5 %
Kidder's....dis 50&10 @ 50&15 %
The "Boss"....dis 60 %
Best Anti-Friction....dis 60 %
Duplex (Wood Track)....dis 60
Terry's Patent....₩ doz. pr., 3½ in. $10; 5 in., $12....dis 40&5@40&10
Cronk's Patent....No. 4, $12; No. 5, $14.40; No. 6, $18 %....dis 50&5 @ 50&10 %
Wood Track, Iron Clad....₩ ft. 8¢, dis 50&5 @ 50&10 %
Architect....₩ set $6.00, dis 20 %
Eclipse....dis 20&10
Felix....₩ set $4.50, dis 20 %
Richards' (lots of 50 sets dis 20&10&10 %)..dis 20&10 %
Lane's Steel Anti-Friction....dis 30&10 %
The Ball Bearing Door Hanger....dis 20&10 @ 25&10 %
Warner's Patent....dis 20@20&10 %
Stearns' Anti-Friction....dis 20 @ 20&10 %
Faultless....dis 40 @ 40&5 %
American....₩ set $6; dis 20&10 %
Rider & Wooster, No. 1, 62½¢; No. 2, 75¢....dis 40 %
Paragon, Nos. 1, 2 and 3....dis 50 %
Paragon, Nos. 4, 5, 5½ and 6....dis 25&5 %

Harness Snaps.
Anchor (T. & S. Mfg Co.)....dis 65 %
Henshaw's, list of 1½ changed to $14.00....dis 65 %
Judd's, list of 1½ changed to $14.00....dis 65 %
Fitch's (Bristol), list of 1½ changed to $14.00....dis 65 %
Hotchkiss....dis 10 %
Andrews....dis 50 %
Sargent's Patent Guarded....dis 70&10&10 %
German, old list....dis 75 %
German, Sargent's 1886 list....dis 50&10 %
Covert....dis 50&2 %
Covert, New Patent....dis 50&2 %
Covert New R. E....dis 60@2 %
Covered Spring....dis 66⅔&10 %

Hatchets.—List Jan. 1, 1886.
Isaiah Blood....dis 35 @ 40 %
Hunt's Shingling Lath and Claw....dis 40&5 %
Hunt's Broad....dis 40 %
Hurd's....dis 40&5 @ 40&10 %
Yerkes & Plumb....dis 40&5 %
Underhill Edge Tool Co....dis 40&5 @ 40&10 %
C. Hammond & Son....dis 40&10 @ 50 %
Simmons....dis 35 @ 40 %
Peck's....dis 40&10 @ 40&10&5 %
Kelly's....dis 50@50&5 %
Ten Eyck Edge Tool Co....dis 40&10@40&10&5 %
Collins, following list....dis 10 %
Shingling, Nos. 1 2 3....₩ doz $5.50 $6.00 $6.50
Claw, Nos. 1 2 3....₩ doz 6.00 6.50 7.00
Lathing, Nos. 1 2 3....₩ doz 5.50 6.00 6.50

Hay Knives.
Lightning....₩ doz $18 dis 20 %
Electric....₩ doz $9.50 @ $10.50
Gem....₩ doz $12.50 @ $13.50
Wadsworth's....dis 35&5 @ 40 %
Heath Patent....₩ doz $13 @ $13.50
Carter's Needle....₩ doz $18, dis 10&5 @ 10&10 %

Hinges.
Wrought Iron Hinges—
Strap and T....dis 65&5&2 %
Screw Hook and Strap { 8, 10, 12 in.. ₩ ℔....3¼@3¾¢ / 14 to 36 in. ₩ ℔....2½@2¾¢
Heavy Welded Hook { 8 to 12 in., ₩ ℔....3¼@3¾¢ / 14 in. & up, ₩ ℔....2½@2¾¢
Screw Hook and Eye { ½ in....₩ doz $1.50 / ¾ in....₩ doz $2.45 / 1 in....₩ doz $3.80 } dis 10 %
Rolled Blind Hinges, Nos. 32 and 34....dis 50&10 %
Rolled Blind Hinges, Nos. 242 and 234....dis 55&10 %
Rolled Plate....dis 70&10 %
Rolled Raised....dis 70&10 %
Plate Hinges "Providence" { 8, 10 & 12 in., ₩ ℔....4½¢ / over 12 in., ₩ ℔....3½¢
Spring Hinges—
Geer's Spring and Blank Butts....dis 40 %
Union Spring Hinge Co.'s list, March, 1886...dis 20 %
Acme, Crown, Empire and U. S....dis 30 %
American, Gem, and Star, Japanned....dis 20 %
American, Gem, and Star, Bronzed....net
Oxford, Bronze and Brass....net
Barker's Double Acting....dis 20&10 %
Union Mfg. Co....dis 25 %
Bommer's....dis 30 %
Buckman's....dis 25 %
Chicago....dis 30 %
Gate Hinges—
Western....₩ doz $4.40, dis 55 %
N. E....₩ doz $7.00, dis 55 %
N. E. Reversible....₩ doz $5.20, dis 55 %
Clark's, Nos. 1 2 3....dis 60&10&2 %
N. Y. State....₩ doz $5.00, dis 55 %
Automatic....₩ doz $12.50, dis 50 %
Common Sense....₩ doz pair $4.50, dis 50 %
Seymour's....dis 45&10 %
Shepard's, Nos. 1, 2, 10 and 20....dis 60&10&10 %
Shepard's, No. 3....dis 60&10&5 %
Reed's Latch and Hinges....₩ doz sets $12, dis 50 %

Hoes.
Handled—
Garden, Mortar, &c....dis 60&10&10 %
Planter's, Cotton, &c....dis 60&10&10 %
Warren Hoe....dis 60 %
Magic....₩ doz $4.75
Eye—
D. & H. Scovil....dis 15 %
Lane & Gale, S. & O. Pat....dis 50 @ 50&10 %
Maynard, " "....dis 60 @ 60&5 %
Sandusky Tool Co., " "....dis 60&10 %
Hubbard & Co., " "....dis 60&10 %
Grub....dis 60 @ 60&10 %

Hog Rings and Ringers.
Hill's Improved Ringers....₩ doz, $5.50 @ 5.75
Hill's Old Style Ringers....₩ doz, $3.25 @ 3.50
Hill's Tongs....₩ doz, $5.50 @ 6.00
Hill's Rings....₩ doz boxes, $2.00 @ 2.25
Perfect Rings....₩ doz boxes $1.75 @ 2.00
Perfect Ringers....₩ doz $2.50
Blair's Hog Ringers....₩ doz, $2.50 @ 2.75
Blair's Hog Rings....₩ doz, $1.10 @ 1.15
Champion Ringers....₩ doz $2.25
Champion Rings, Double....₩ doz. $2.25
Brown's Ringers....₩ doz, $2.25
Brown's Rings....₩ doz, $1.25 @ 1.35

Hoisting Apparatus.
"Moore's" Hand Hoist, with Lock Brake....dis 15 %
"Moore's" Differential Pulley Block....dis 20 %

Holders, Tool.
Balz Pat....₩ doz $4; dis 25 %

Hollow-Ware.
Iron—
Stove Hollow-Ware, Ground....dis 50&5@50&10 %
Stove Hollow-Ware, Unground....dis 50&10@60&5 %
Enameled and Tinned Hollow-Ware—
Kettles....dis 50&10 %
Oval Boilers, Saucepans and Glue Pots dis 30 @ 35 %
Gray Enameled Ware....dis 40 @ 40&5 %
Agate and Granite Ware....dis 25 %
Rustless Hollow-Ware....dis 50 @ 50&5 %
Galvanized Tea-Kettles—
Inch....6 7 8 9
Each....55¢ 60¢ 65¢ 75¢
Silver Plated—
Reed & Barton....dis 40 %
Meriden Brittania Co....dis 40 %
Simpson, Hall, Miller & Co....dis 40 %
Rogers & Brother....dis 40
Holmes & Edwards Silver Co....dis 50
William Rogers Mfg. Co....dis 50 %

Hooks.
Cast Iron—
Bird Cage, Sargent's list....dis 60&10&10 %
Bird Cage, Reading....dis 60&10&10 %
Clothes Line, Sargent's list....dis 66⅔&10 %
Clothes Line, Reading list....dis 66⅔&10 %
Ceiling, Sargent's list....dis 60&10 %
Harness, Reading list....dis 60&10&10 %
Coat and Hat, Sargent's list....dis 60&10 %
Coat and Hat, Reading....dis 60&10 %
Wrought Iron—
Cotton....₩ doz $1.25
Cotton Pat. (N. Y. Mallet & Handle W'ks)....dis 30 %
Tassel and Picture (T. & S. Mfg. Co.)....dis 50 %
Wrought Staples, Hooks, &c....See Wrought Goods
Bench Hooks....See Bench Stops
Wire—
Wire Coat and Hat, Gem, list April, 1886....dis 45 %
Wire Coat and Hat, Miles', list April, 1886....dis 45 %
Belt....dis 80 @ 80&5 %
Wire Screw Hooks and Eyes..See Bright Wire Goods
Grass....₩ doz $2.00
Bush....dis 55 @ 60 %
Whiffletree—Patent....dis 55 %
Hooks and Eyes—Malleable Iron....dis 70 %
Hooks and Eyes—Brass....dis 60&10&10 %
Fish Hooks, American....dis 40&10 %

Horse Nails.

	Nos. 5	6	7	8	9	10	
Ausable....₩ ℔	31¢	28¢	26¢	25¢	24¢	23¢	dis 25&10 %
Clinton, Pl'n. ₩ ℔		23¢	21¢	20¢	19¢	18¢	dis 25&10 %
Clinton, Fin.. ₩ ℔		24¢	22¢	21¢	20¢	19¢	dis 25&10 %
Essex....₩ ℔	31¢	28¢	26¢	25¢	24¢	23¢	dis 40 %
Putnam....₩ ℔	27¢	24¢	22¢	21¢	20¢	19¢	dis 5&7 %
Vulcan....₩ ℔	26¢	23¢	21¢	20¢	19¢	18¢	dis 12½ %
Northwest'n. ₩ ℔	28¢	25¢	23¢	22¢	21¢	20¢	dis 10&10 %
Globe....₩ ℔	26¢	23¢	21¢	20¢	19¢	18¢	dis 10&5&5 %
A. C....₩ ℔	28¢	25¢	23¢	22¢	21¢	20¢	dis 25&5 %
C. B.-K....₩ ℔	28¢	25¢	23¢	22¢	21¢	20¢	dis 25 %
Champlain...₩ ℔	31¢	28¢	26¢	25¢	24¢	23¢	dis 25&10 %
New Haven....₩ ℔	31¢	28¢	26¢	25¢	24¢	23¢	dis 25&10 %
Bridgewater. ₩ ℔	28¢	25¢	23¢	22¢	21¢	20¢	dis 30 %
Saranac....₩ ℔	26¢	23¢	21¢	20¢	19¢	18¢	dis 25 @ 30 %
Champion....₩ ℔	28¢	25¢	23¢	22¢	21¢	20¢	dis 10&10&5 %
Capewell....₩ ℔	31¢	28¢	26¢	25¢	24¢	23¢	dis 35&5 %
Star....₩ ℔	26¢	23¢	21¢	20¢	19¢	18¢	dis 10&10 %

NOTE.—Concessions on above quotations are frequently made.

Horse Shoes—See Shoes, Horse.

Hose, Rubber....75&10 @ 75&10&5 %
N. Y. B. & P. Co., Standard....dis 60 @ 60&10 %

Ice Picks, Chisels, &c.
American Ice Chisel Pol'd....₩ doz $3.00, dis 20 %
National Ice Chisel....₩ doz $6.25, dis 20 %
Novelty Ice Breakers....₩ doz $6.25, dis 20 %
White's Sliding Head Picks....₩ doz $2.50 dis 40 %
Dunlap's Ring Picks....₩ doz $2.00, dis 15 %
Wood Head Picks, Sargent's....₩ doz $1.60, dis 50&10 %
Iron Head Picks, Sargent's....₩ doz $1.25, dis 50&10 %
Ice Mallets, Pick in handle....₩ doz $2.00, dis 15 %
Ice Axes, Small Cast or Mall...₩ doz $1.25, dis 20&10 %
Combination Ice Tools....₩ doz $2.00 net
Acme Ice Pick and Tongs...₩ gross $55.00, dis 50&10 %
Roger's Lightning Ice Chisel....₩ gross $28.50

Ice Cream Freezers.—See Freezers.

Ice Tongs.
Champion, S. S. & Co....₩ doz $4.00, dis 25&10 %
Family....₩ doz $2.75, dis 20@25 %

Jack Screws.—See Screws.

Kettles.
Brass, 7 to 17 in. inclusive....₩ ℔ 22¢ net
Brass larger than 17 inches....₩ ℔ 24¢ net
Enameled and Tea Kettles....See Hollow-Ware

Keys.
Lock Asso'n list Dec. 18, 1885....dis 45&2@45&7½&2 %
Eagle, Cabinet, Trunk and Padlock....dis 40&2 %
Hotchkiss' Brass Blanks....dis 40 %
Hotchkiss' Copper and Tinned....dis 40 %
Hotchkiss' Padlock and Cabinet....dis 35 %
Ratchet Bed Keys....₩ doz $4.00, dis 15 %

Knife Sharpeners.
Parkin's Applewood Handles....₩ doz $6.00, dis 40 %
Parkin's Rosewood or Cocobolo...₩ doz $9.00, dis 40 %

Knives.
Wilson's Butcher Knives....dis 25 @ 30 %
Ames' Butcher Knives....dis 25 %
Nichols' Butcher Knives....dis 40&10 %
Ames' Shoe Knives....dis 20@25 %
Ames' Bread Knives....₩ doz $1.50, dis 15 @ 20 %
Moran's Shoe and Bread Knives....dis 20 %
Goodell Co., Butcher, Shoe, Bread, &c....dis 40 %
Hay and Straw....See Hay Knives
Table and Pocket....See Cutlery

Knobs.
Door Mineral } List Dec. 18, 1885, dis 45&2@45&7½&2 %, but net prices are often made.
Door Por. Jap'd
Door Por. Por
Door Por. Plated
Hemacite Door Knobs, new list....dis 35&5@35&10 %
Yale & Towne Wood Knobs, list Dec. 1885....dis 40 %
Furniture Plain....75¢ gross (non. dis 10 %
Furniture, Wood Screws....dis 25&10 %
Base, Rubber Tip....dis 70&10&5 %
Picture, Judd's....dis 60&10&10 %
Picture, Sargent's....dis 66⅔&10 %
Picture, Hemacite....dis 35&5 %
Shutter, Porcelain....dis 65&10 %
Carriage, Japanned....₩ gross 80¢, dis 60&10 %

Ladles.
Melting, Sargent's....dis 55&10 %
Melting, Reading....dis 35&10 %
Melting, Monroe's Patent....₩ doz. $4.00, dis 40 %
Melting, P. S. & W....dis 35&10 @ 40
Melting, Warner's....dis 30 %

Lanterns.
Tubular, Standard No. 0, ₩ doz....$6.75 @ $7.00
Tubular, Standard No. 1, ₩ doz....8.25 @ 8.50
Tubular, Lift Wire, No. 0, ₩ doz....8.50
Tubular, Lift Wire, No. 1, ₩ doz....10.00
Guards for Tubulars, add ₩ doz....25
Police, Small, $6.00; Med., $7.25; Large, $9.75. dis 10@15 %
Porter's Tin R. R....$10, dis 20 %
Owl....$9, dis 20@25

Lawn Mowers.
Standard Machines....dis 50&5 %
Cheaper Machines....dis 50&10 @ 60 %

Lemon Squeezers.
Porcelain Lined, No. 1....₩ doz. $6.00, dis 25&30 %
Wood, No. 2....₩ doz. $3.00, dis 35 %
Wood, Common....₩ doz $1.70 @ 1.75
Dunlap's Improved....₩ doz. $3.75, dis 20 %
Sammis'....No. 1, $5; 2, $9; 12, $18 ₩ doz. dis 25&10 %
Jennings' "Star"....₩ doz $2.50
The "Boss"....₩ doz $2.50
Dean's....Nos. 1, ₩ doz $6.50; 2, $3.35; 3, $1.90
Little Giant....dis 50 %
King....dis 40&5 %

Lines.
Cotton and Linen Fish, Draper's....dis 50 %
Draper's Chalk....dis 60 %
Draper's Mason's Linen, 84 ft., No. 1, $1.20; No. 2, $1.75; No. 3, $2.25; No. 4, $2.75; No. 5, $3.25..dis 25 %
Cotton Chalk....dis 55 %
Silver Lake, Braided, Nos. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₩ gross....dis 25 %
Masons' Linen, No. 3½, $1.50; No. 4, $2; No. 4½, $2.50
Masons' Colored Cotton....dis 45
Wire Clothes, No. 18, $3.75; No 19, $3.25; No. 20, $2.75.
Ventilator Cord, Samson Braided, White or Drab Cotton....$7.50 ₩ doz. dis 20 %

Locks, Padlocks, Cabinet Locks, &c.
Door Locks, Latches, &c.—
List, Dec. 18, 1885....dis 45&2 @ 45&7½&2 %
Nimick & Brittan's Burglar-Proof Locks.. dis 45&2 %
Reading Hardware Co. (list Feb. 2 1885)....dis 70 %
Perkins' Burglar Proof....dis 60&25 %
Plate....dis 33⅓&2 %
F. Many's "Extension Cylinder"....$10.50 ₩ doz net
Barnes Mfg. Co....dis 40 %
Yale Flat Key....dis 40 %
Dietz Flat Key....dis 30 %
L. & C. Round Key Latches....dis 0&10 %
L. & C. Flat Key Latches....dis 33⅓&10 %
Romer's Night Latches....dis 20 %
Yale new list....dis 40 %
"Shepardson" or "U. S."....dis 35 %
"Felter" or "American"....dis 40&10 %
Seed's N. Y. Hasp Lock....dis 25 %
Cabinet—
Eagle, Gaylord Parker and Corbin.... } List March, '84, revised Jan. 1, '85....dis 40&2
Deitz, Nos. 36 to 39....dis 40 %
Deitz, Nos. 51 to 63....dis 40 &10 %
Dietz, Nos. 86 to 96....dis 30 %
Stoddard Lock Co....dis 30 %
"Champion" Night Latches....dis 40 %
Yale....dis 40 %
Barnes Mfg. Co....dis 40 %
Eagle and Corbin Trunk....dis 25&2 %
"Champion" Cabinet and Combination....dis 33⅓ %
Romer's....dis 25 %
Padlocks—
Russell & Erwin, Mallory, Wheeler & Co., Nimick & Brittan Mfg. Co., Wm. Wilcox & Co., Norwich Lock Co. } List Dec. 23, 1884. Dis 70&5@70&10&5 %
Yale Lock Mfg. Co. s....dis 40 %
Eagle....dis 25&2 %
Eureka, Eagle Lock Co....dis 40&2 %
Romer's, Nos. 0 to 91....dis 35 %
Romer's, Nos. 200 to 505....dis 20 %
A. E. Dietz....dis 40 %
"Champion" Padlocks....dis 33⅓ %
Hotchkiss....dis 30 %
"Star"....dis 15 %
"Horse Shoe." ₩ doz.. $9....dis 40 %
Barnes Mfg. Co....dis 40 %
Nock's....dis 30 %
Brown's Patent....dis 25 %
Scandinavian....dis 90 %
Fraim's Pat. Scandinavian, new list (low)....dis 60 %

Lumber Tools.
Ring Peavies, "Blue Line" Finish....₩ doz $20.00
Ring Peaves, Common Finish....₩ doz $18.00
Steel Socket Peavies....₩ doz $21.00
Mall. Iron Socket Peavies....₩ doz $19.00
Cant Hooks, "Blue Line" Finish....₩ doz $16.00
Cant Hooks, Common Finish....₩ doz $14.00
Cant Hooks, Mall. Socket Clasp, "Blue Line" Finish....₩ doz $16.00
Cant Hooks, Mall. Socket Clasp Common Finish....₩ doz $14.50
Cant Hooks, Clip Clasp, "Blue Line" Fin. ₩ doz $14.00
Cant Hooks, Clip Clasp, Common Finish..₩ doz $12.00
Hand Spikes....₩ doz 6 ft., $15.00; 8 ft., $20

	12 ft.	14 ft.	16 ft.	18 ft.	20 ft.
Pike Poles, Pike & Hook, ₩ doz	$11.50	12.50	14.50	17.50	21.50
Pike Poles, Pike only, ₩ doz	10.00	11.00	13.00	16.00	20.00
Pike Poles not ironed, ₩ doz	6.00	7.00	9.00	12.00	16.00
Setting Poles, ₩ doz	14.00	15.00	17.00	....	....

wamp Hooks....₩ doz $18.00
Landing Blocks....₩ doz $22.50
Skidding Tongs....₩ doz $51.00
Log Binders....₩ doz $26.00
Bended Boot Calks, 1 to 5 M, dis 25 %; 5 to 10 M, dis 30 %
Square Steel Boot Calks....dis 40 %
Chain Rafting Dogs....₩ 100 $12.50
Ring Rafting Dogs...₩ 100, med., $10.00; large, $12.00
Timber Grapples....₩ doz $30.00

Lustro.
Four-ounce bottles....₩ doz, $1.75; ₩ gro. $17.00 net

Mallets.
Hickory....dis 20&10 %
Lignumvitæ....dis 20&10 %
Penfield Block Co, Hickory and L. V..dis 30 @ 30&10 %

Mattocks.
Regular list....dis 60 @ 60&10 %

Meat Cutters.
Dixon's—Nos. 1 2 3 4
₩ doz....$14.00 17.00 19.00 30.00—dis 45&5 %
Woodruff's....Nos. 100 150
₩ doz. $15.00 18.00—dis 45&5 %
Champion....Nos. 200 300 400
₩ doz. $22.00 27.00 40.00—dis 45&5 %
Hales'....Nos. 11 12 13
₩ doz...$27.00 33.00 45.00 { dis 70 @ 70 &5 %
American....dis 35 %
Nos. 1 2 3 4B
Each....$5.00 7.00 10.00 25.00 50.00 60.00
Enterprise....dis 30 %
Nos. 10 12 22 32 42
Each....$3 00 2.50 4.00 6.00 10.00
Pennsylvania....dis 40&10 %
Nos. 1 2 3 00
₩ doz....$24.00 28.00 36.00 28.00
Miles' Challenge..Nos. 1 2 3
₩ doz..$22.00 30.00 40.00—dis 45@45&5 %
Kieser's No. 55....$40 ₩ doz, dis 40 @ 40&10 %
Kieser's Gem....$25 ₩ doz, dis 40 @ 40&10 %
Kieser's Monarch....$45 ₩ doz, dis 40 @ 40&10 %
Kieser's Butcher....$40 each, dis 20 @ 20&5 %
Draw Cut..Nos. 5 2 6 8
Each....$50.00 75.00 80.00 $25.00—dis 20 @ 25 %
Beef Shavers (Enterprise Mfg. Co.)....dis 20&10 @ 30 %
Chadborn's Smoked Beef Cutter....₩ doz, $66.00

Mincing Knives.
Am. (2d quality), ₩ gro, 1 blade, $7; 2 blades, $12; 3 blades, $18....Net
Lothrop's....dis 20&10 %
Smith's, ₩ doz, Single, $2.00; Double, $3....dis 40@45 %
Knapp & Cowles....dis 50&10@60 %

Molasses Gates.
Stebbins' Pat's....dis 70&10@75&5 %
Stebbins' Genuine....dis 66⅔&10 %
Stebbins' Tinned Ends....dis 40&10 %
Chase's Hard Metal....dis 50&10 %
Bush's....dis 20 %
Lincoln's Pattern....dis 66⅔&10 %
Weed's....dis 20&10 %
Boss Nos. 1 2 3 4
$7.00 8.00 9.00 10.00..₩ doz, dis 60&10&10 %

Money Drawers.—₩ doz., $18.

Muzzles.—Safety. ₩ doz, $3....dis 25 %

Nails....See Trade Report
Wire Nails, list April 13, '86....dis 50&10 %
Wire Nails, Standard Penny....₩ keg, card rate, $3.75
Wire Carpet Nails....See Tacks

Nail Puller.
Curtiss Hammer....₩ doz $9.00 net
Giant, No. 1....₩ doz $30.00, dis 10 %
Pelican....₩ doz $9.00. dis 25 %
Boss....₩ doz $30, dis 30 %

Nuts and Washers.
Square Nuts, ⅜ and smaller....9½¢ off list
Square Nuts, 7-16 and larger....8½¢ off list
Hexagon Nuts, ⅜ and smaller....10½¢ off list
Hexagon Nuts, 7-16 and larger....9½¢ off list
Washers, ⅜ and smaller....9¾¢ off list
Washers, 7-16 and larger....8¾¢ off list
In lots less than 100 ℔, ₩ ℔ add ½¢ to list, 1 ℔ boxes, 1¢ to list.

Nut Crackers.
Table (Humason & Beckley Mfg. Co.)....dis 40 %
Blake's Pattern....₩ doz $2.00, dis 10 %
Turner & Seymour Mfg. Co....dis 50 %

Oakum.
Government....₩ ℔ 7¢
U. S. Navy....₩ ℔ 6½¢
Navy....₩ ℔ 5½¢

Oilers.
Zinc and Tin....dis 65&5@70 %
Brass and Copper....dis 50&10 %
Malleable, Hammers' Improved, No 1, $3.60; No. 2, $4.00; No. 3, $4.40 ₩ doz....dis 10 @ 10&10 %
Malleable, Hammers, Old Pattern, same list....dis 40 %
Prior's Patent or "Paragon" Zinc dis 60&5 @ 60&10 %
Prior's Patent or "Paragon" Brass....dis 50 %
Olmstead's Tin and Zinc....dis 60 %
Olmstead's Brass and Copper....dis 50 %
Broughton's Zinc....dis 60 %
Broughton's Brass....dis 50 %

Packing, Steam.
N. Y. Belting & Packing Co....dis 50 @ 50&10 %
American Packing....10¢ @ 11¢ ₩ ℔
Russia Packing....14¢ ₩ ℔
Italian Packing....14 @ 15¢ ₩ ℔
Cotton Packing....15 @ 18¢ ₩ ℔
Jute....8 @ 9¢ ₩ ℔

Padlocks.—See Locks.

Pails, Galvanized Water.

Quarts	10	12	14
Hill's Light Weight, ₩ doz	$2.75	3.00	3.25
Hill's Heavy Weight, ₩ doz	3.00	3.25	3.75
Whiting's	2.75	3.00	3.25
Fire Buckets	2.75	3.25	3.50

Buckets, see Well Buckets.

Pencils.
Faber's Carpenters'....high list, dis 50 %
Faber's Round Gilt....₩ gro $5.25 net
Dixon's Lead....₩ gro $4.50 net
Dixon's Lumber....₩ gro $6.75 net
Dixon's Carpenters'....dis 40&10 %

Picks.
Railroad, 5 to 6, $11.00; 6 to 7, $13....dis 60 @ 60&10 %
Adze Eye, 5 to 6, $12.00; 6 to 7, $13....dis 60 @ 60&10 %

Picture Nails.
Brass Head, Sargent's list....dis 50&10&10 %
Brass Head, Combination list....dis 50&10 %
Porcelain Head, Sargent's list....dis 50&10&10 %
Porcelain Head, Combination list....dis 40&10 %
Miles' Patent....dis 40 %

Pinking Irons....₩ doz 65¢ net

Pipe, Wrought Iron.
1¼ and under, Plain....dis 42½ %
1¼ and under, Galvanized....dis 32½ %
1½ and over, Plain....dis 57½ %
1½ and over, Galvanized....dis 40 %
Boiler Tubes....dis 52½ %

Planes and Plane Irons.
Wood Planes—
Molding....dis 15&2 %
Bench, First Quality....dis 20&2 %
Bench, Second Quality....dis 25&2 %
Iron Planes—
Bailey's Stanley R. & L. Co.)....dis 20&10 %
The Stanley (S. R. & L. Co.)....dis 20&10 %
Bailey's "Victor"....dis 20&10 %
Steer's Iron Planes....dis 35 %
Meriden Mal. Iron Co.'s Iron Planes....dis 20&10 %
Davis's Iron Planes....dis 20&10 %
} Small extras often given by Jobbers.
Plane Irons—
Plane Irons....dis 20&10 %
Plane Irons, Butcher's....$5.00 @ $5.25 to £
Plane Irons, Buck Bros....dis 30 %
Plane Irons, Middlesex Mfg. Co., "Baldwin Iron," Single and Cut....dis 20 @ 25 %
Double....dis 33⅓ @ 40 %
L. & I. J. White....dis 25 %

Pliers and Nippers.
Button's Patent....dis 30&10 @ 40 %
Hall's Pat. Compound Lever Cutting Nippers, No. 2, 5 in., $13.50; No. 4, 7 in., $21.00 ₩ doz dis 20&10@33⅓ %
Humason & Beckley Mfg. Co....dis 60 %
Gas Pliers....dis 60 %
Gas Pliers, Custer's Nickel Plated....dis 60&5 %
Eureka Pliers and Nippers....dis 40 %
Russell's Parallel....dis 25 %
P. S. & W. Cast Steel....dis 50 %
P. S. & W. Tinners' Cutting Nippers....add 6 % dis 10 %

Plumbs and Levels.
Standard List....dis 70&10@70&10&10 %
Disston's....dis 45&10 %
Pocket Levels....dis 70&10@70&10&10 %
Davis' Inclinometers....dis 10&10 %

Poppers, Corn.
Round or Square, 1 qt....₩ gro $14.50 @ $15
Round or Square, 2 qt....₩ gro $25 @ $26

Post Hole and Tree Augers and Diggers.
Samson Post Hole Digger....₩ doz $36.00, dis 20&10 %
Fletcher Post Hole Augers....₩ doz $36.00. dis 20 %
Eureka Diggers....₩ doz $16 @ $17
Leed's....₩ doz $8.00 @ $9.00
Vaughan's Post Hole. Auger, per doz, $24.00....dis 33⅓ @ 33⅓&5 %
Kohler's Little Giant....₩ doz $18.00
Kohler's Hercules....₩ doz $16.00
Kohler's New Champion....₩ doz $9.00
Schneidler....₩ doz $16 @ $17
Ryan's Post Hole Diggers....₩ doz $24
Cronk's Post Bars....doz $60, dis 50&5 @ 50&10 %

Potato Parers.
White Mountain....₩ doz $5.00 @ 5.50
Antrim Combination....₩ doz $8.00
Hoosier....₩ doz $13.50

Pruning Hooks and Shears.
Disston's Combined Pruning Hook and Saw. ₩ doz $18.00....dis 20&10 %
Disston's Pruning Hook....₩ doz $12.00, dis 20&10 %
E. S. Lee & Co.'s Prunin Tools....dis 40 %
Pruning Shears, Henry Pat....₩ doz $3.75 @ $4.00 net
Henry's Pruning Shears....₩ doz $4.25 @ $4.50 net
Wheeler. M. & Co.'s Combination....₩ doz $12, dis 20 %
Dunlap's Saw and Chisel....₩ doz $8.50, dis 30 %
J. Mallinson & Co....No. 1, $5.25; No. 2, $7.25

Pulleys.
Hot House, Awning, &c....dis 66⅔&10 %
Japanned Screw....dis 66⅔&10 %
Brass Screw....dis 70&10 %
Japanned Side....dis 66⅔&10 %
Japanned Clothes Line....dis 60&10 %
Hay Fork, Solid Eye, $4.00; Swivel, $4.50 { dis 50&10 @ 50&10&5 %
Hay Fork, "Anti-Friction," 5 in. Solid, $5.70...dis 50 %
Hay Fork, "F" Common and Pat. Bushed....dis 20 %
Hay Fork, Tarbox Pat. Iron....dis 20 %
Hay Fork, Reed's Self-Lubricating....dis 60 %
Shade Rack....dis 45 %
Tackle Blocks....See Blocks

Pumps.
Cistern, Best Makers....dis 50 %
Pitcher Spout, Best Makers....dis 60 %
Pitcher Spout, Cheaper Goods....dis 70 @ 70&5 %

Punches.
Saddlers' or Drive, good quality....₩ doz 65¢ @ 70¢
Bemis & Call Co.'s Cast Steel Drive....dis 50&5 %
Bemis & Call Co.'s Springfield Socket....dis 50&5 %
Spring, good quality....₩ doz $2.50 @ $2.60
Spring, Leach's Patent....dis 15 %
Bemis & Call Co.'s Spring and Check....dis 40 %
Solid Tinners'....₩ doz $1.44, dis 55 %
Tinners' Hollow Punches....dis 20&2 %

Rail.
Sliding Door, Wrought Brass. ₩ ℔ 35¢, dis 20@25 %
Sliding Door, Bronzed Wrt. Iron....₩ foot 7¢
Sliding Door Iron, Painted....₩ foot 4¢, dis 20&10&5 %
Barn Door, Light....Inch. ⅝ ¾ ⅞
Per 100 feet....$2.50 3.00 4.40—dis 10 %
B. D. for N. E. Hangers— Small. Med. Large
Per 100 feet....$2.15 2.70 3.25 net
Terry's Wrought Iron, 5¢ ₩ foot.... net
Victor Track Rail, 7¢ ₩ foot....dis 50&2 %

Rakes.
Cast Steel....dis 60&10 @ 60&10&10 %
Malleable....dis 60&10 @ 60&10&10 %
Piqua Handle and Mfg. Co....dis 70 %

Razor.
J. R. Torrey Razor Co....dis 20 %
Wostenholme & Butcher....$10 to £, dis 10 %

Razor Strops.
Genuine Emerson....dis 60 @ 60&5 %
Imitation Emerson....₩ doz $2.00, dis 20&10&10 %
Torrey's....dis 20 %
Badger's Belt and Combination....₩ doz $2
Lamont Combination....₩ doz $4

Rivets.
Black and Tinned Iron, Flat Head M Rivets (in packages and in bulk)....; Block and Carriage (in C packages).... } dis 50 %
Iron Rivets (other than above) in bulk....; Black and Tinned Burrs.... } dis 45 %
Bay State, ordinary, in bulk....dis 55 %
Note.—Rivets are frequently sold at concessions of 7½ @ 10 % from above prices.
Copper Rivets and Burrs....dis 60&5 @ 60&10 %
Nos. 7 8 9 10 11 12 13 14 15
₩ ℔ 49¢ 50¢ 52¢ 54¢ 56¢ 58¢ 60¢ 65¢ 70¢

Rivet Sets....dis 50&2 @ 50&10 %

Rods.
Stair, Brass....dis 25&5 %
Stair Black Walnut....₩ doz 50¢

Rollers.
Barn Door, Sargent's list....dis 60&10&10 %
Acme (Anti-Friction)....dis 55 %
Union Barn Door Roller....dis 70 %

Rope.
Mnf'rs list, July 12, 1886.
Manila....¾ inch and larger ₩ ℔ 12½¢
Manila....⅝ inch ₩ ℔ 13 ¢
Manila....¼ and 5-16 inch ₩ ℔ 13½¢
Manila Tarred Rope....₩ ℔ 12 ¢
Manila, Hay Rope....₩ ℔ 12½¢
Sisal....¾ inch and larger ₩ ℔ 9½¢
Sisal....⅝ inch ₩ ℔ 10 ¢
Sisal....¼ and 5-16 inch ₩ ℔ 10½¢
Sisal, Hay Rope....₩ ℔ 9½¢
Sisal, Tarred Rope....₩ ℔ 9 ¢
Sisal, Single Ply Lath Yarn....₩ ℔ 8½¢
} Dis 10@1½¢ ₩ ℔.
Cotton Rope....₩ ℔ 15 @ 18¢ net
Jute Rope....₩ ℔ 7¢

Rules.
Boxwood....dis 80&10 %
Ivory....dis 55 @ 55&10 %
Stephens' Ivory....dis 50 %

Sad Irons.
From 4 to 10, at factory....₩ 100 ℔ $2.35 @ $2.50
Self-Heating....₩ doz. $9.00 net
Self-Heating, Tailors'....₩ doz. $18.00 net
Gleason's Shield and Toilet....dis 25 %
Mrs. Pott's Irons, Double Pointed....dis 40 @ 40&5 %
Mrs. Pott's Irons, Square Back....dis 40 @ 40&5 %
Enterprise Star Irons, new list, July 20, 1882....dis 40 %
Combined Fluter and Sad Iron....₩ doz. $15.00, dis 15 %
Fox Reversible, Self-Fluter....₩ doz., $24.00 net
Chinese Laundry (N. E. Butt Co.)....8½¢, dis 15 %
New England....5¢, dis 15 %

Sand Paper and Emery Paper.
List April 19, 1886....dis 25 @ 27 %

Sash Cord.
Common....₩ ℔, 11¢ @ 11½¢
Patent....₩ ℔, 13½ @ 14¢
White Cotton Braided, fair quality....₩ ℔ 28¢ @ 29¢
Common Russia Sash....₩ ℔ 14¢
Patent " "....18¢
Cable Laid Italian "....26¢
India Cable Laid "....14¢
Silver Lake, A Quality, White....50¢. dis 10&10&5 %
Silver Lake, A Quality, Drab....55¢. dis 10&10&5 %
Silver Lake, B Quality, White....50¢. dis 10&10&5 %
Silver Lake, B Quality, Drab....55¢. dis 10&10&5 %
Silver Lake, C Quality, White (only)....28¢ @ 29¢
Sylvan Spring, A Quality, 50@55¢.dis 10&10@10&10&10 %
Samson, Braided, White Cotton....50¢ dis 20@20&5 %
Samson, Braided, Drab Cotton....55¢ dis 20@20&5 %
Samson, Braided, Italian Hemp....55¢ dis 20 @ 20&5 %
Samson, Braided, Linen....80¢ dis 20 @ 20&5 %

Sash Locks.
Clark's No. 1, $10.00; No. 2, $8.00 ₩ gross....dis 33⅓ %
Ferguson's....dis 33⅓ %
Morris Sash Locks, Iron....dis 60&10 %
Morris Sash Locks, Iron, Nos. 04½, 4½, 5....dis 75 %
Real Bronze....dis 60
Walker's....dis 10 %
Attwell Mfg. Co....dis 25 @ 33⅓ %
Hammond's Window Springs....dis 40 %
Common Sense, Japanned, Coppered and Bronzed....₩ gross
Common Sense, Nickel Plated....₩ gross $12.00 net
Universal....dis 30 %
Kempshall's Gravity....dis 60 %
Kempshall's Model....dis 60@60&10 %
Corbin's Daisy, list February 15, 1886....dis 70 %
Payson's Perfect....dis 50&10&5 @ 60 %
Hugunin's New and Improved Adjustable Sash Balances, list March, 1885....dis 33⅓ %
Hugunin's New Sash Locks, list March, 1885..dis 33⅓ %
Stoddard "Practical"....dis 10 %
Ives Patent....dis 55 %
Liesche's Nos. 100 & 110, ₩ gro, $8; 105, $10. dis 20&10 %

Sash Weights.
Solid Eyes, in ton lots....₩ ton, $20

Sausage Stuffers or Fillers.
Miles' "Challenge"....₩ doz, $30, dis 50@50&5 %
Perry....₩ doz. No. 1, $15; No. 0, $21, dis 50@50&5 %
Draw Cut No. 4....each, $30.00, dis 20 %
Enterprise Mfg. Co....dis 20&10 @ 30 %
Silver's....dis 25 %

Saws.
Disston's Circular, Mill and Cross Cut....dis 45&10 %
Disston's Hand, Panel, Rip, &c....dis 20&10 %
Atkins' Circular....dis 50 %
Atkins' Silver Steel Diamond X Cuts....₩ foot 75¢
Atkins' Concave Tooth Dexter X Cuts....₩ foot 55¢
Atkins' Special Steel Diamond X Cuts....₩ foot 32¢
Atkins' Champion and Electric Tooth X Cuts....₩ foot 30¢
Atkins' Hollow Back X Cuts....₩ foot 21 @ 22¢
Atkins' Shingle, Mulay, Drag, &c....dis 45 %
W. M. & C. Hand....dis 30 @ 30&5 %
W. M. & C. Champion X Cuts. Regular....₩ foot 26¢
W. M. & C. X Cuts, Thin Back....₩ foot 29¢
Peace Circular and Mill....dis 45&10 %
Peace Hand Panel and Rip....dis 20&10 @ 20&10&5 %
Peace Cross Cuts, Standard....₩ foot 25¢
Peace Cross Cuts, Thin Back....₩ foot 28¢
Peace Band Saws, all widths....dis 20&10 %
Richardson's Circular....dis 45 %
Richardson's Mill....dis 45 %
Richardson's X-Cuts, No. 1, 30¢; No. 2, 27¢; No. 3, 25¢
Boynton's Lightning Panel, Butcher, &c. ..dis 25&10 %
Boynton's Lightning X Cuts....₩ ft 32¢ @ 33¢
Boynton's Lightning One Man X Cuts..₩ ft 38¢ @ 40¢
Boynton's Lightning Buck Saws...₩ doz $6.00, dis 10 %
Hack Saws—
Griffin's Hack Saws, complete....dis 40&10 @ 50 %
Griffin's Hack Saw, Blades only....dis 40&10 @ 50 %
Star Hack Saws and Blades....dis 25 %
Diamond, Hack Saws and Blades....dis 25 %

Saw Frames.
White, Vermont....₩ gro $12 @ $11
Red, Polished and Varnished..₩ doz $1.50, dis 10@15 %
Saw Rods....$10 list dis 10&10 %

Saw Sets.
Stillman's Genuine....₩ doz $5.00 and $7.75, dis 40&5 %
Stillman's Imita..₩ doz $3.25 and $5.25, dis 40&5@40&10 %
Common Lever....₩ doz $2.00. dis 40&5 %
Leach's....No. 0. $8.00; No. 1, $15.00, dis 15 @ 20 %
Nash's....dis 20&10 @ 20&10&10 %
Hammer, Hotchkiss....$5.50, dis 10 %
Hammer, Bemis & Call Co.'s new Patent ...dis 30&5 %
Bemis & Call Co.'s Lever and Spring Hammer.dis 30&5 %
Bemis & Call Co.'s Plate....dis 10 %
Bemis & Call Co.'s Cross Cut....dis 12½ %
Aiken's Genuine....$13.00, dis 50&10 %
Aiken's Imitation....$7.00, dis 55&5 %
Hart's Patent Lever....dis 20 %
Disston's, Star, $9. No. 15 Hammer, $5.50...dis 20&10 %
Atkins' Adjustable....per doz $6.00
Atkins' Criterion....per doz $7.50
Atkins' Criterion for Hand Saws....per doz $7.50
Morrill's, No. 1, $15.00; Nos. 3 and 4, $24....dis 40&10 %
Croissant (Keller), No. 1, $15.00; No. 2, $24.00, dis 33⅓&10 %
Boynton's No. 1, $12 ₩ doz; No. 2, $10....dis 25 %

Saw Tools.
Atkins' Patent....per doz sets $6.00

Scales.
Hatch, Counter, No. 171....₩ doz $21
Hatch, Tea, No. 161....₩ doz $7.50
Union Platform, Plain....$2.25 @ 2.30
Union Platform, Striped....$2.40 @ 2.50
Chatillon's Grocers' Trip Scales....dis 50 %
Chatillon's Eureka....dis 25 %
Chatillon's Favorite....dis 40 %
Family, Turnbull's....dis 30@30&10 %

Scale Beams.
Scale Beams, List of Jan. 12, 1844..dis 60&5 @ 60&10 %
Scale Beams, Custer....dis 30@33⅓ %

Scrapers.
Adjustable Box Scraper (S. R. & L. Co.), $6.50, dis 20&10 %
Box, 1 Handle....₩ doz $4.00, dis 10 %
Box, 2 Handle....₩ doz $6.00, dis 10 %
Defiance Box and Ship....dis 20&10 %
Foot....dis 50&10@60 %
Ship, Common....₩ doz $3.50 net
Ship, Providence Tool Co....dis 10 %

Screen Window and Door Frames.
Porter's Pat. Window and Door Frame....dis 33⅓ %
Screen Corner Irons, Warner's....dis 33⅓ %

Screw Drivers.
Douglas Mfg Co....dis 20&10&10 %
Disston's....dis 45&10 %
Disston's Patent Excelsior....dis 45&10 %
Buck Bros....dis 30 %
Stanley R. & L. Co.'s Varnished Handles....dis 60&10 %
Stanley R. & L. Co.'s Black Handles....dis 50&10 %
Sargent & Co.'s Nos. 1 & 20 Forged Blade..dis 70&10 %
Sargent & Co.'s Nos. 40 & 30, Cast Steel....dis 60&10 %
Sargent & Co.'s No. 60, Round Blade....dis 60&10 %
Knapp & Cowles' No. 1....dis 60&20 @ 70 %
Knapp & Cowles' No. 1 Extra....dis 60 @ 60&10 %
Knapp & Cowles' No. 00 & 4....dis 50&5 @ 50&10 %
Sets interchangeable....₩ doz $18.00, dis 25 %
Champion....dis 25 %
Clark's Patent....dis 20&10 @ 33⅓ %
Crawford's Adjustable....dis 30 %
Knapp & Cowles' Screw-Driver Bitts....₩ doz 90¢
Eilrich's Socket and Ratchet....dis 25 %
Allard's Spiral, new list....dis 25 %
Kolb's Common Sense....₩ doz $6, dis 25&10 %
Syracuse Screw-Driver Bits....dis 30 & 30&5 %

Screws.
Wood Screws—List, February 15, 1886.
Flat Head Iron....d's 75&10 %
Round Head Iron....dis 70&10 %
Flat Head Brass....dis 75 %
Round Head Brass....dis 70 %
Flat Head Bronze....dis 75 %
Round Head Bronze....dis 70 %
} Extra 10 @ 10&5 % often given.
Machine—
Flat Head, Iron....dis 60 %
Round Head, Iron....dis 55 %
Bench and Hand—
Bench, Iron....dis 55&10 @ 55&10&10 %
Bench, Wood, Beech....₩ doz $2.25
Bench, Wood, Hickory....dis 20&10 %
Hand, Wood....dis 25&10 @ 25&10&5 %
Lag or Coach....dis 75 @ 75&10&5 %
Coach, Patent Gimlet Point....dis 75 @ 75&5 %
Bed....dis 25&5 %
Hand Rail, Sargent's....dis 66⅔&10 %
Hand Rail, Humason, Beckley & Co.'s..dis 70&10@75 %
Hand Rail, Am. Screw Co....dis 70 %
Jack Screws, Millers Falls....dis 50 %
Jack Screws, P. S. & W....dis 35 %
Jack Screws, Sargent....dis 60&10 @ 60&10&5 %

Scroll Saws.
Lester, complete, $10.00....dis 25 %
Rogers, complete, $4.00....dis 25 %

Scythes.—(Association prices.)
Grain Scythes—
Clipper, Full Polished, Boxed & Sharp...₩ doz $8.90
German, Cast or Silver Steel, either Half Set or Waldron, in Straw....₩ doz $8.35
Grass Scythes—
Silver Clipper, Boxed and Sharp....₩ doz $7.00
German Steel, Half Set Waldron....₩ doz $6.10
Cast Steel and German Steel, Full Set or Waldron, Sharp and Boxed....₩ doz $6.70
Bush, Bramble and Weed....₩ doz $6.70
Clover....₩ doz $7.00
Imperfect Grass and Bush....₩ doz $5.00
Imperfect Grain....₩ doz $4.70
Note.—The above prices are frequently shaded by jobbers, who give an extra 5 or 10 %.

Scythe Snaths....dis 40&5&2 %

Shears.
American (Cast) Iron....dis 75&10 @ 75&10&5 %
Pruning....See Pruning Hooks and Shears
Barnard's Lamp Trimmers....₩ doz $3.75
Tinners'....dis 20&2 %
Seymour's, List, Dec., 1881....dis 60&10&5 %
Heinsch's, List, Dec., 1881....dis 60&10 %
Heinsch's Tailor's Shears....dis 33⅓ %
First quality C. S. Trimmers....dis 80 %
Second quality C. S. Trimmers.dis 80&10 @ 80&10&5 %
Acme Cast Shears....dis 10&10 %
Diamond Cast Shears....dis 10 %
Clipper....dis 10&10 %
Victor Cast Shears....dis 75&10 %
Howe Bros. & Hulbert, Solid Forged Steel....dis 40 %

Sheaves.
Sliding Door—
M. W. & Co., list Dec. 18, 1885....dis 45&2 %
R. & E., list Dec. 18, 1885....dis 60&2 %
Corbin's list....dis 60&10&2 %
Patent Roller....dis 60&10&2 %
Patent Roller, Hatfield's....dis 70 %
Russell's Anti-Friction, list Dec. 18, 1885..dis 60&2 %
Moore's Anti-Friction....dis 60 %
Sliding Shutter—
R. & E. list Dec. 18, 1885....dis 60&10&2 %
Sargent's list....dis 60&10&10 %
Reading list....dis 60&10&10 %

Ship Tools.
L. & I. J. White....dis 20&5 %
Albertson Mfg. Co....dis 25 %

Shoes, Horse, Mule, &c.
Horse—
Burden's, Perkins', Phœnix, at factory....$3.75
Walker's Forged....$3.75
Mule—Add $1 ₩ keg.

Shovels and Spades.
Ames' Shovels, Spades, &c., list Nov. 1, 1885....dis 20 %
Note.—Jobbers frequently give small extras on above.
Griffith's Black Iron....dis 50&10 %
Griffith's C.S....dis 50&10 %
Griffith's Steel....dis 60 @ 60&5 %
Griffith's Solid Cast Steel R. R. Goods....dis 20 %
Old Colony....dis 15 @ 15&10 %
St. Louis Shovel Co....dis 20 %
Hussey, Binns & Co....dis 20 @ 30 %
Hubbard & Co....dis 20@20&7½ %
Chisholm....dis 40 %
Lehigh Mfg. Co....dis 50&10 %
Payne Pettebone & Son, list January 2, 1882. dis 50&5@50&10 %
Remington's (Lowman's Patent)....dis 30 @ 30&10 %
Rowland's, Black Iron....dis 50&10 %
Rowland's Steel....dis 60&5 %

Shot.
Drop, ₩ bag, 25 ℔ (2¢ off for cash in 5 days....$1.60
Drop, ₩ bag, 5 ℔....37¢

Shovels and Tongs.
Iron and Brass Head....dis 60&10&5@60&10&10 %

Skeins, Thimble.
Western list....dis 70&10@75 %

Sieves.
Buffalo Metallic, S. S. & Co., new list....dis 50&25 %
Barler's Flour Sifters....₩ doz $2.25

Sieves, Wooden Rim—	Iron.	Plated.
Mesh 18, Nested, ₩ doz	65¢	83¢
Mesh 20, Nested, ₩ doz	80¢	95¢
Mesh 24, Nested, ₩ doz	95¢	$1.05

Slates.
School, by case....dis 45 @ 50 %

Soldering Irons.
Covert's Adjustable. list Jan. 1, 1886....dis 35&2 %

Spoke Shaves.
Iron....dis 45 %
Wood....dis 30 %
Bailey's (Stanley R. & L. Co.)....dis 40&10 %
Stearns'....dis 30&10 @ 30&10&10 %

Spoke Trimmers.
Bonney's....₩ doz $10.00, dis 50 %
Stearns'....₩ doz $9.00, dis 20&10 %
Ives'....No. 1, $15.00; No. 2, $12.00 ₩ doz, dis 55&10 %
Douglass'....₩ doz $9.00, dis 20 %

Spoons and Forks.
Tinned Iron—
Basting, Central Stamping Co.'s list .. dis 33⅓&2 %
Solid Table and Tea, Central Stamping Company's list....dis 33⅓&2 %
Buffalo, S. S. & Co....dis 50&10 %
Silver-Plated—
Meriden Brit. Co., Rogers....dis 50&5 @ 50&10&5 %
Reed & Barton....dis 50&5 @ 50&10&5 %
C. Rogers & Bros....50&5 @ 50&10&5 %
Rogers & Bro....50&5 @ 50&10&5 %
Wm. Rogers Mfg. Co....dis 50&10 @ 60 %
Simpson, Hall, Miller & Co....dis 50&10&5 @ 60 %
Holmes, Booth & Haydens....dis 50&10&5 @ 60 %
Holmes & Edwards Silver Co....dis 60 @ 60&10 %
H. & E. Silver Co. Steel Silver-Plated Teas, $15; Tables, $30....dis 50 @ 50&10 %
German Silver....dis 50 @ 50&5 %
German Silver, Hall & Elton....dis 40&5 %
Britannia....dis 60&10 @ 60&10&10 %

Springs.
Elliptic, Concord, Platform and Half Scroll.... dis 60&5 @ 60&10 %

Squares.
Steel and Iron....; Nickel-Plated.... } ...dis 70&5@70&10&5 %
Try Square and T Bevels....dis 60&10 %
Disston's Try Square and T Bevels....dis 45&10 %
Winterbottom's Try and Miter....dis 20&10 %

Staples.
Fence Staples, Galvanized....₩ ℔, 4¼ @ 4½¢
Fence Staples, Plain....₩ ℔, 3¼ @ 3½¢

Steelyards....dis 40&10@50&5 %

Stocks and Dies.
Blacksmith's....dis 30@50&10 %
"Lightning" Screw Plate....dis 10&10@25 %

Stone.
Hindostan No. 1, 3½¢; Axe, 4½¢; Slips, 5½¢....
Sand Stone....₩ ℔, 2½¢
Washita Stone, Extra....₩ ℔, 25¢
Washita Stone, No. 1....₩ ℔, 20¢
Washita Stone, No. 2....₩ ℔, 16¢
Washita Slips, No. 1. Extra....₩ ℔, 50¢
Washita Slips, No. 1....₩ ℔, 40¢
Arkansas Stone, No. 1, 4 to 8 in....₩ ℔, $1.45@1.50
Arkansas Stone, No. 1, 6 to 9 in....₩ ℔, $1.75
Turkey Oil Stone, Chase....4 to 8 in., ₩ ℔, 60¢
Turkey Slips, Chase....₩ ℔, $2.00
Lake Superior....₩ ℔, 17¢
Lake Superior Slips....₩ ℔, 31@32¢

Stove Boards.
Buffalo Zinc, S. S. & Co....dis 50&10 %

Stove Polish.
Joseph Dixon's....₩ gro $6.00, dis 10 %
Gem....₩ gro $4.50, dis 10 %
Gold Medal....₩ gro $6.00, dis 25 %
"Mirror"....₩ gro $6.00, dis — %
Lustro....₩ gro $4.75 net
Ruby....₩ gro $3.75 net
Rising Sun....₩ gro $5.75 net
Dixon's Plumbago....₩ ℔ 8¢ net
Boynton's Noon Day. ₩ gro....$5.00
Parlor Pride Stove Enamel....₩ gross, $13
Yates' Liquid, 2 3 5 10 gal. cans
₩ gal... $1.00 .90 .75 .65
Jet Black....₩ gro $3.50
Japanese....₩ gro $3.50
Fireside....₩ gro $2.50

Tacks, Brads, &c.
List, Sept. 1, 1882, and supplement, Jan. 1, 1886
American Iron Carpet Tacks, all kinds....dis 75&10 %
Steel Carpet Tacks. all kinds....dis 75&10 %
Swedes Iron Carpet Tacks all kinds....dis 75&10 %
Swedes Iron Wire Carpet Tacks....dis 75&5 %
Swedes Iron Tacks....dis 75 %
Swedes Iron Upholsterers' Tacks....dis 70&10 %
Tinned Swedes Iron Tacks....dis 70&10 %
Tin'd Swedes Iron Upholsterers' Tacks....dis 70&10 %
Gimp and Lace Tacks....dis 70&5 %
Tinned Gimp and Lace Tacks....dis 70&5 %
American Iron Cut Tacks....dis 75&10 %
Copper Tacks....dis 60&5 %
Copper Finishing and Trunk Nails....dis 60&5 %
Cigar Box Nails....dis 55&10 %
Finishing Nails....dis 55&10 %
Hungarian Nails and Miners' Tacks....dis 60&5 %
Trunk and Clout Nails....dis 60&5 %
Tinned Trunk and Clout Nails....dis 60&5 %
Basket Nails....dis 60&5 %
Chair Nails....dis 60&5 %
Common and Patent Brads....dis 60&5 %
Tinned Capped Trunk Nails....dis 45 %
Looking-Glass Tacks....dis 45 %
Picture-Frame Points....dis 45 %
Leathered Carpet Tacks....dis 45 %
Brush Tacks....dis 45 %
Shoe Finders'....List June 1, 1886, dis 10&10 %
Lining and Saddle Nails, List Jan. 1, 1886:
Silvered....dis 30&10 %
Japanned....dis 20&10 %
Double-pointed Tacks....dis 80 @ 80&10 %
Wire Carpet Nails....dis 50 @ 50&10 %
Steel Wire Brads, R. & E. Mfg. Co....dis 50 @ 50&10 %

Tap Borers.
Common and Ring....dis 20&10 %
Ives' Tap Borers....Nos. 1, 2, 4—dis 15&10 %
Ives' Tap Borers....Nos. 13, 14—dis 25&10 %
Enterprise Mfg. Co....dis 20&10 %
Clark's....dis 33⅓ @ 35 %

Tapes. Measuring.
American....dis 25&10 %
Spring....dis 40 %
Chesterman's....Regular list dis 25 @ 30 %

Thermometers.
Tin Case....dis 80 @ 80&10 %

Thimble Skeins.—See Skeins.

Ties, Bale.
Steel Wire, Standard list....dis 50&10 %

Tinners' Shears, &c.
Shears and Snips (P. S. & W.)....dis 20 @ 25 %
Punches—See Punches.
Snips, J. Mallinson & Co....dis 33⅓ %

Tinware.
Stamped, Japanned and Pieced, Central Stamping Co., list June 1, 1886. dis 25&2 @— %
Pieced, S. S. & Co....dis 30&2 %
Japanned, S. S. & Co....dis 25&10&2 %
Stamped, S. S. & Co....dis 33⅓&2 %
} Extras some times given.

Tobacco Cutters.
Enterprise Mfg. Co. (Champion)....dis 20&10 @ 30 %
Wood Bottom....₩ doz $5.00 @ $5.25
All Iron....₩ doz $4.25
Nashua Lock Co.'s....₩ doz $18.00, dis 50 @ 55 %
Wilson's....dis 55 %
Clipper (Sargent & Co.)....₩ doz $24, dis 50&10&10 %
Acme....₩ doz $20.00, dis 40 %

Transom Lifters
Wollensak's Patent Iron Bronzed....dis 50 %
Reiher's Improved Self-Locking (Class 301)....dis 40 %
Reiher's Improved Set Screw (Class 201)....dis 45 %
Reiher's (Class 101)....dis 50&10 %
Excelsior....dis 50&10&2 %
Shaw's....dis 45&10 %
Payson's Universal....dis 40 %

Traps.
Game—
Newhouse....dis 35 %
Oneida Pattern....dis 60&10&10 @ 70 %
Game, Blake's Patent....dis 40&10&5 %
Mouse and Rat—
Mouse, Wood, Choker....₩ doz holes, 15¢
Mouse, Round Wire....₩ doz $1.50, dis 10 %
Mouse, Cage, Wire....₩ doz $2.50, dis 10 %
Mouse, Catch-'em-alive....₩ doz $2.50, dis 15 %
Mouse, "Bonanza"....₩ gross $10 net
Mouse, Delusion....₩ gross $18.00, dis 15 %
Rat, "Decoy"....₩ gross $10.00, dis 10 %
Ideal....₩ gross $10
Cyclone....₩ gross $5.25

Trowels
Lothrop's Brick and Plastering....dis 20&10@30 %
Reed's Brick and Plastering....dis 15 %
Disston's Brick and Plastering....dis 20&10@20&10&5 %
Peace's Plastering....dis 25 %
Clement & Maynard's....dis 20 %
Rose's Brick....dis 15 @ 20 %
Brade's Brick....dis 25 %
Worrall's Brick and Plastering....dis 20 %
Garden....dis 70 %

Triers.
Butter and Cheese....dis 25 %

Trucks, Warehouse, &c.
Penfield Block Co.'s list, 1882....dis 40 %

Tubes, Boiler.—See Pipe.

Twine.

		BC.	B.
No. 9, Flax Twine,	¼ and ½ ℔ Balls	24¢	31¢
No. 12, " "	¼ and ½ "	22¢	24¢
No. 18, " "	¼ and ½ "	20¢	22¢
No. 24, " "	¼ and ½ "	20¢	22¢
No. 36, " "	¼ and ½ "	19¢	21¢

No. 264, Mattrass, ¼ and ½ "....50¢
Chalk Line, Cotton, ½ ℔ Balls....28¢
Mason Line, Linen, ½ "....60¢
2-Ply Hemp, ¼ and ½ ℔ Balls (Spring Twine)....14½¢
3-Ply Hemp, 1 ℔ Balls....15¢
3-Ply Hemp, 1½ ℔ Balls....13¢
Cotton Wrapping, 5 Balls to ℔....14¢ @ 20¢
2, 3, 4 and 5 Ply Jute, ½ ℔ Balls....11¢
Wool....6¢ @ 6½¢
Paper....13¢ @ 14¢
Cotton Mops—6, 9, 12 and 15 ℔ to doz....17¢

Vises.
Solid Box....dis 50&10 @ 60 %
Parallel—
Fisher & Norris Double Screw....dis 15&10 %
Stephens'....dis 25 %
Parker's....dis 20 @ 25 %
Wilson's....dis 55 %
Howard's....dis 40 %
Bonney's....dis 40 %
Millers Falls....dis 40 @ 40&10 %
Trenton....dis 40&5 @ 40&10 %
Merrill's....dis 15@20 %
Sargent's....dis 60&10&10 %
Backus and Union....dis 40
Double Screw Leg....dis 15&10 %
Prentiss....dis 25 @ 25&5 %
Simpson's Adjustable....dis 40
Saw Filers—
Bonney's, Nos. 2 & 3....₩ doz $15.00, dis 40 %
Stearn's....dis 40 %
Sargent's....dis 60&10&10 %
Hopkins'....₩ doz $17.50, dis 10 %
Reading....dis 37½&10 %
Wentworth....dis 20&10
Cowell Hand Vises....dis 20 %
Bauer's Pipe Vises....dis 10 %

Wagon Boxes.
Per lb....2½¢

Washer Cutters.
Smith's Patent....₩ doz $12.00, dis 20&10&10 %
Johnson's....₩ doz $11.00, dis 33⅓ %
Penny's....₩ doz Pol. $14; Jap'd, $16, dis 55 %
Appleton's....₩ doz $16.00, dis 60&10 %
Bonney's....dis 30&10 %

Washers.—See Nuts and Washers.

Wedges.—Iron....₩ ℔ 3¼¢
Steel....₩ ℔ 3¾¢

Well Buckets, Galvanized.
Hill's....₩ doz ..12 qt., $3.50; 14 qt., $4.50
Iron Clad....₩ doz., 14 qt., $8—dis
Whiting's Flat Iron Band....₩ doz $4.25
Whiting's Wired Top....₩ doz $4.00

Well Wheels—8 in., $1.75; 10 in., $2.05; 12 in., $2.75

Wire.
Iron—
Market, Br't & Annealed, Nos. 0 to 18..dis 70 @ 72½ %
Market, Coppered, Nos. 0 to 18....dis 65&5 %
Market Galvanized, Nos. 0 to 18....dis 60&5 %
Market, Tinned, Tinned list, Nos. 0 to 18...dis 60&5 %
Stone Bright and Annealed, Nos. 16 to 18....dis 65 %
Stone, Bright and Annealed, Nos. 19 to 26...dis 67½ %
Stone, Bright and Annealed, Nos. 27 to 36...dis 72½ %
Stone, Galvanized, Nos. 19 to 30....dis 50&10 %
Stone, Tinned, Tinned list, Nos. 18 to 36....dis 60 %
Tinned Broom Wire, Nos. 18 to 24....dis 60 %
Annealed Fence, Nos. 8 & 9....dis 65 %
Annealed Grape, Nos. 10 to 14....dis 65 %
Brass and Copper, new list, Jan. 18, '84. dis 33⅓@30&10
Barb Fence....See Trade Report
Wire on Spools....dis 65 %
Malin's Spld. Wire, 1 ℔, ½ ℔ & ¼ ℔ sp'ls....40&10&5 %
Cast Steel Wire....dis 50 %
Stubs' Steel Wire....$6.00 to £, dis 30 %
Steel Music Wire, Nos. 12 to 30....55¢ ₩ ℔
Picture Wire....dis 60&10 %
Barb Wire Safety Guards....₩ 1000 $9.00, dis 25 %
Wire Clothes Lines. See Lines.

Wire Cloth.
Green, drab and black, best quality, ₩ 100 sq. ft....$2

Wire Goods.—See Bright Wire Goods.

Wire Rope.—List May 1, 1886....dis 33⅓ %

Wrenches.—American Adjustable....dis 45 %
Baxter's Adjustable "S"....dis 35&10 %
Baxter's Diagonal....dis 35&10 %
Coes' Genuine....cash in 10 days, dis 60&3 %
Coes' "Mechanics'"....dis 60&10&3 %
Coes' Pattern, Malleable....dis 80&10 @ 80&10&5 %
Coes' Pattern, Wrought....dis 80&10 %
Girard Standard....dis 70&10 %
Girard Agricultural....dis 80&10 @ 80&10&5 %
Lamson & Sessions' Engineers'....dis 60&10 %
Lamson & Sessions' Standard....dis 70&10 %
Lamson & Sessions' Agricultural....dis 80 %
Sterling Wrench, Wrought....dis 80&10 %
Bemis & Call's Patent Combination....dis 30&5 %
Bemis & Call's Merrick's Pattern....dis 35 %
Bemis & Call's Brigg's Pattern....dis 25 %
Bemis & Call's Cylinder or Gas Pipe....dis 40&5 %
Bemis & Call's No. 3 Pipe....dis 35&5 %
Aiken's Pocket (Bright)....$6.00, dis 50&10 %
The Favorite Pocket (Bright)....₩ doz $4.00, dis 40 %
Webster's Patent Combination....dis 25 %
Boardman's....dis 25@25&10 %
Always Ready....dis 25&5 %
Alligator....dis 40&10 %
Donohue's Engineer....dis 25 %
Acme, Bright....dis 60&3 %
Acme, Nickeled....dis 45 %
Acme, Bicycle, 4½ in....dis 45 %
Walker's....dis 60&3
Diamond....dis 40 %
Diamond Patent Steel....dis 40 %

Wringers.

	Per doz.
Peerless No. 2½	27.00
Peerless No. 3½	31.50
Universal, No. 2½	27.00
Universal, No. 2	30.00
Universal, No. 1¼	31.50
Universal, No. 1½	36.00
Universal, No. 1	54.00
Universal, for Set Tubs, A 2½	36.00
Universal, for Set Tubs, E 1½	45.00
Universal, for Set Tubs, C 1	63.00
Novelty, for Common Tubs, No. 2 & 2½, 10 in	27.00
Novelty for Common Tubs, No. 3 & 3½, 11-in	31.50
Excelsior, for Stationary Tubs, No. E, 10-inch	36.00
Excelsior, for Stationary Tubs, No F, 11-inch	40.50
Excelsior, with Folding Bench, No. A, 10-inch	45.00
Excelsior, with Folding Bench, No. B, 11-inch	49.50

} net, dis 2 % cash in 10 days.

Empire Purchase Gear Wringers—

No. 3, Round or Set Tub, 10-inch roll	$45
No. 4, Round or Set Tub, 11-inch roll	54
No. 5, Round or Set Tub, 12-inch roll	63
No. 3, Bench, 10-inch roll	58
No. 4, Bench, 11-inch roll	66
No. 5, Bench, 12-inch roll	75
Empire, Daisy, 10-inch roll	20

} dis 2 %, Cash in 10 days.

Eureka....₩ doz $21
Am. M. Co. Wringer No. 2....$20
Superior....$21

Wrought Goods.
Staples Hooks, &c....dis 80&10 @ 80&20 %

WHOLESALE METAL PRICES, July 21, 1886.

METALS.

IRON.—DUTY: Bars, 8-10¢ to 1 1-10¢ ₩ lb; provided that no Bar Iron shall pay a less rate of duty than 35 %. Sheet, 1 1-0¢ lb 1 5-10¢ ₩ lb. Band, Hoop and Scroll, 1¢ to 1 4-10¢ ₩ lb. Railroad Bars weighing more than 25 lb ₩ yard, 7-10¢ of 1¢ ₩ lb.

Standard American Pig Iron

Foundry No. 1 X	₩ ton	$18.00 @ 18.50
Foundry No. 2 X	₩ ton	17.00 @ 17.50
Gray Forge	₩ ton	15.75 @ 16.25

No. 1 Scotch Pig Iron.

Carnbroe	₩ ton	$18.50 @ 19.00
Coltness	₩ ton	19.75 @ 20.00
Shotts	₩ ton	19.75 @ 20.00
Glengarnock	₩ ton	18.50 @ 19.00
Gartsherrie	₩ ton	19.00 @ 19.25
Langloan	₩ ton	19.50 @ 20.00
Summerlee	₩ ton	19.25 @ 19.75
Dalmellington	₩ ton	18.50 @ 19.00
Eglinton	₩ ton	17.50 @ 18.00
Clyde	₩ ton	18.00 @ 18.50

Rails.

Steel, at Eastern mills	₩ ton	$34.50 @ 35.00
Old Rails, Ts	₩ ton	$18.50 @ 19.00

Scrap.

Wrought, ₩ ton, from yard		$18.25 @ 18.50

Bar Iron from Store.

Common Iron: ¾ to 1 in. round and square... / 1 to 6 in. x ¾ to 1 in	₩ lb	1.75 @ 1.80¢
Refined Iron: ¾ to 2 in. round and square... / 1 to 6 in. x ¾ to 1 in	₩ lb	1.9 @ 2.4¢
1 to 6 in. x ¼ and 5-16	₩ lb	2.10 @ 2.30¢
Rods—¾ and 11-16 round and sq	₩ lb	2 @ 2.8¢
Bands—1 to 6x3-16 to No. 12	₩ lb	2 @ 2.5¢
"Burden's Best" Iron, base price	₩ lb	2.9¢
Burden's "H. B. & S." Iron, base price	₩ lb	2.5¢
Norway Nail Rods		5 @ 6¢

Sheet Iron from Store.

	Common American.	R. G. Cleaned.
Nos. 10 to 16	₩ lb 2.70 @ 3 ¢	3½¢
17 to 20	₩ lb 3 @	3½¢
21 to 24	₩ lb 3 @	3½¢
25 and 26	₩ lb 3.12½ @	3¾¢
27	₩ lb 3.25 @	3¾¢
28	₩ lb 3.37½ @ 3.50	¢ ¢

	B B	3d qual.
Galvanized to 20	₩ lb 5 ¢	4½¢
Galvanized 21 to 24	₩ lb 5¾¢	5 ¢
Galvanized, 25 to 26	₩ lb 5¾¢	5⅝¢
Galvanized, 27	₩ lb 6¼¢	5¾¢
Galvanized, 28	₩ lb 6¾¢	6¼¢
American Russia	₩ lb A, 10¢	B, ¢
Russia	₩ lb 9¾¢	@10½ ¢
American Cold Rolled B. B.	₩ lb 5 ¢	@ ¢

Iron Wire.—*(See Wire.)*

STEEL.—DUTY. Ingots, Bars, Sheets, &c., valued at 4¢ ₩ lb or less, 45 % ad. val.; valued above 4¢ and not above 7¢ ₩ lb, 2¢ ₩ lb; valued above 7¢ and not above 10¢ ₩ lb, 2¾¢ ₩ lb; valued above 10¢ ₩ lb, 3¼¢ ₩ lb. *Extras.*—Steel Bars, Rods, &c., cold hammered or polished, in any way in addition to ordinary hot rolling, 1¼¢ ₩ lb in addition to above; Steel Circular Saw Plates, 1¢ ₩ lb in addition to the above.

American Cast Steel.

For American Steel, see Pittsburgh quotations.

Chrome Steel.

Tool Steel, ordinary sizes, ⅝ to 3 inches, net	10 @ 14¢
Adamantine Shoes and Dies	8 @ ..¢
Magnet Steel	14 @ ..¢

English Steel.

Best Cast	₩ lb	15 ¢
Extra Cast	₩ lb	16½ @ 17 ¢
Circular Saw Plates	₩ lb	14 ¢
Round Machinery, Cast	₩ lb	10 ¢
Swaged, Cast	₩ lb	16 ¢
Best Double Shear	₩ lb	15 ¢
Blister, 1st quality	₩ lb	14 ¢
German Steel, Best	₩ lb	10 ¢
2d quality	₩ lb	9 ¢
3d quality	₩ lb	8 ¢
Sheet Cast Steel, 1st quality	₩ lb	15 ¢
2d quality	₩ lb	14 ¢
3d quality	₩ lb	12½¢

TIN.—DUTY Plates, Sheets, Tagger and Terne. 1¢ ₩ lb; Bars Block and Pigs free

Banca	₩ lb	23 ¢ @ 24 ¢
Straits	₩ lb	22¾¢ @ 23 ¢
English	₩ lb	23 ¢ @ 24 ¢
Bar	₩ lb	24 ¢ @ 25 ¢

Charcoal Tin Plates.

I C 10x14 225 sheets	₩ box	$5.00	@ 7.50
I C 12x12 225 sheets	"	5.25	@ 7.50
I C 20x28, 112	"	10.25	@ 15.25
I X 10x14 225 sheets	"	6.25	@ 9.25
I X 12x12 225 sheets	"	6.25	@ 9.50
I X 14x20, 112	"	6.25	@ 9.25
D C 12½x17 100	"	5.00	@ 5.50
D X 12½x17, 100	"	6.25	@ 7.00
For each additional X add	"	1.25	@ 2.00

Coke Tin Plates.

	Best.	Ordinary.
I C 10x14	$4.75	$4.55 @ 4.60
I C 14x20		
I C 15x12	4.87½	4.75 @ ...
I C 10x20, gutters, 225 sheets	8.00	7.25
I C 20x28 112 sheets		9.80 @ 10.00

Terne Plates.

	Prime Char. 3d. quality	Coke.
I C 14x20 M. F.	$6.75	
I C 14x20 Old Process		$6.75
I C 20x28 "		13.75
I C 14x20,	$4.50 @ 4.75	4.37½
I X 14x20	6.00 @ 6.50	4.25
I C 20x28	9.00 @ 9.75	8.75 8.50 @ 8.70
I X 20x28	12.00 @ 14.00	
I C 20x300	13.50 @	

Tin Boiler Plates.

IXX 14x26, 2 sheets for No. 7, 112 sheets		@ $12.00
IXX 14x28, 2 " " No. 8, "		@ 13.00
IXX 14x31, 2 " " No. 9, "		@ 15.00

COPPER.—DUTY: Pig, Bar and Ingot, 4¢: Old Copper, 3¢ ₩ lb. Manufactured (including all articles of which Copper is a component of chief value), 35 % ad valorem.

Ingot, Lake	₩ lb	10¼¢ @ 10½¢
Ingot, Baltimore	"	10 ¢ @ 10⅛¢
Ingot Anchor	"	10 ¢ @ 10⅛¢

Cold Rolled Sheet, All Sizes.

16 oz. per square foot, and heavier	₩ lb, 18¢
14 and 15 oz. per square foot	₩ lb, 19¢
12 and 13 oz. per square foot	₩ lb, 20¢
10 and 11 oz. per square foot	₩ lb, 21¢

TINNING.

Sheets, one side, 10, 12 and 14 x 48	each, 6¢
Sheets, one side, other sizes	₩ square foot 2½¢
For tinning both sides, double the above prices.	
For tinning boiler sizes, 9 in., 14 x 60	each, 15¢
For tinning boiler sizes, 8 in., 14 x 56	each, 12¢
For tinning boiler sizes, 7 in., 14 x 52	each, 12¢

Cold Rolled Sheathing (14 x 48).

16 oz. to square foot, and heavier	₩ lb 17¢
14 oz. and up to 16 oz.	₩ lb 18¢
12 oz. and up to 14 oz.	₩ lb 19¢
Tinning, 6¢ each.	

Copper Bottoms.

Pits and Flats, 14 oz	₩ lb 30¢
Pits and Flats, 12 oz	₩ lb 21¢

O'Neill's Patent Planished Copper.—Net.

14x48

14 and 16 oz. and heavier .27¢	By the case. ₩ lb 26¢
12 oz. and lighter .30¢	" " " 29¢

Boiler Sizes.

7 in., 14x52. 8 in., 14x56. 9 in., 14x60.

14 and 16 oz. and heavier .29¢	By the case. ₩ lb 28¢

(And all sizes not over 20 in. wide.)

30x48 and 30x60.

4 and 16 oz. and heavier	₩ lb 31¢
2 oz	" 34¢

Planished Brass same price as Planished Copper

Copper Wire.—*(See Wire.)*

Sheathing Metal.

Yellow Sheathing Metal, ₩ lb	.18¢ @ ...

BRASS AND GERMAN SILVER.

Brown & Sharpe's Gauge the Standard for Metal; Old English Gauge the Standard for Wire.

Brass Manufacturers' Price List, January 17, 1884 ..... dis. 30 @ 30 %

LEAD.—DUTY: Pig, $2 ₩ 100 lb; Old Lead, 2¢ ₩ lb; Pipe and Sheet, 3¢ ₩ lb.

Pig	4.95 @ 5.25¢
Bar	5½ @ 5¾¢
Pipe	6¾¢, dis 30 %
Block Tin Pipe	40¢, dis 20 %
Tin Lined Pipe	15¢, dis 20 %
Sheet	7¾¢, dis 20 %
Shot, ₩ bag, 25 lb	Drop, $1.60; Buck, $1.8
Chilled Shot, ₩ bag, 25 lb	$1.85

ANTIMONY.

Hallett's	₩ lb	8½ @ 9 ¢
Cookson	"	9½ @ 11 ¢

SPELTER—Duty: Pigs, Bars and Plates, $1.50 ₩ 100 lbs.

American, cash	4⅝ ¢ @ 5¢
Bergenport	9¢

ZINC—Duty: Pig or Block, $1.50 ₩ 100 lbs. Sheet, 2½¢ ₩ lb.

600 lb casks	5.70 @ 5.95 ¢
Zinc.—Open	6¼ @ 6¾ ¢
Zinc Tubing	dis. 10 @ 20 %

Zinc Tubing—Dis. 25 %.

Plain	.27
Fancy	.33
Scotch and Extra Patterns	.36

BABBITT METAL.

N. P. U.	₩ lb	6½ @ 7¢
X		.10¢
X X		.15¢
J. B.		.20¢

WIRE.

Market Wire.—Put up in 63 lb bundles.

Nos. 00 to 9,	10, 11,	12,	13, 14,	15, 16,	17,	18,
	10	11	11¾	12¾	14	15 16
Bright Market Wire						dis 67½ %
" Charcoal						dis 47½ %
" Bale Wire, Nos. 7 to 12						dis 62½ %
Annealed Market Wire						dis 67½ %
" Fence Wire, Nos. 8 and 9						
" Grape Wire, Nos. 10 to 14						
Coppered Market Wire						dis. 62½ %
Bale Wire, Nos. 7 to 12						dis. 57½ %
Galvanized Market Wire						dis 57 ½%
" Fence Wire						

Stone or Weaving Wire.

Nos.	16	17	18	19	20	21	22	23	24	25	26
Cents	14	15	16	19	20	21	22	23	24	25	26
Nos.	27	28	29	30	31	32	33	34	35	36	..
Cents	28	29	30	32	33	35	37	40	45	55	..

Nos. 16 to 18	dis. 70 @ 70 %	
19 to 26	"	70 %
27 to 36	" 75 @ 75 %	
Galvanized Stone Wire	"	50 %

Steel Wire.

Cast Steel, Steel Wire list	dis. 50 %

Brass and Copper Wire.

Old English Gauge the Standard.—Dis 20 @ 25.

	Common High Brass	Low Brass	Gilding Bronze and Copper.
All Nos. to No. 16, inclusive	$0.22	$0.26	$0.30
No. 17 and 18	.23	.27	.31
" 19 and 20	.24	.28	.32
" 21	.25	.29	.33
" 22	.26	.30	.34
" 23	.28	.32	.36
" 24	.30	.34	.38
" 25	.32	.36	.40
" 26	.35	.39	.43
" 27	.38	.42	.46
" 28	.42	.46	.51
" 29	.43	.49	.54
" 30	.48	.52	.62
" 31	.51	.55	.67
" 32	.55	.59	.73
" 33	.59	.63	.82
" 34	.64	.68	.95
" 35	.70	.74	1.30
" 36	.76	.80	1.50
" 37	1.00	1.04	1.70
" 38	1.30	1.34	2.00
" 39	2.00	2.00	3.25
" 40	2.60	2.60	5.75

Spring Wire, 2 cents per pound advance. Whitened Wire, 3 cents per pound advance. Flat, Square and Half-Round Wire, 4 cents advance on Round Wire. Fancy Wire, not less than 10 cents advance on Round Wire. Spooling on one-pound Spools, 12 cents per pound extra. Spooling on ten-pound Spools or more, 2 cents per pound extra.

MISCELLANEOUS TINNERS' STOCK.

Solder.

½ & ½, Warranted	.15	@ 15½¢
Extra	.14	@ 14½¢
No. 1 Refined	.13	@ 13½¢
No. 2 Solder	.12	@ 12½¢
Extra wiping	.11¾	@ 12¼¢

Rivets.

Iron and Tinned, new list, Dec. 10, 1881	dis. 50 %
In bulk, new list, Dec. 10, 1881	dis. 45 %
Copper Rivets and Burrs	dis. 50&10@60 %

Nos.	7	8	9	10	11	12	13	14	1
₩ lb.	49¢	50¢	52¢	54¢	56¢	58¢	60¢	65¢	70¢

Stove Bolts.

American Screw Co.'s	dis. 70 %
R. B. & W.	dis. 70 %
R. & E. Mfg. Co.	dis. 70 %

FRENCH GLASS.

August 20, 1885. Per Box, 50 feet.

Single Thick.

Sizes.	1st. E F H	2d. I E H	3d. H H	4th. H B
25 6 x 8 to 10 x 15	$11.50	$10.50	$10.00	$9.50
40 11 x 14 to 16 x 24	13.00	12.25	11.50	10.75
50 18 x 22 to 20 x 30	17.00	16.00	14.50	13.25
54 15 x 36 to 24 x 30	19.00	17.00	15.00	
60 26 x 28 to 24 x 36	20.00	18.50	16.25	
70 26 x 36 to 26 x 44	21.50	20.00	16.50	
80 36 x 46 to 30 x 50	23.50	22.00	19.00	
84 30 x 52 to 30 x 54	25.00	23.00	20.00	
90 30 x 56 to 34 x 56	26.00	24.00	22.00	
94 34 x 58 to 34 x 60	27.50	26.00	23.50	
100 36 x 60 to 40 x 60	31.0	28.00	26.00	

Double Thick.

Sizes.	1st. E F H D	2d. I E H D	3d. H H D	4th. H B D
25 6 x 8 to 10 x 15	$14.00	$13.50	$13.00	$12.25
40 11 x 14 to 16 x 24	17.00	16.00	15.25	14.50
50 18 x 22 to 20 x 30	22.00	20 50	19.00	
54 15 x 36 to 24 x 30	24.00	22.00	20.00	
60 26 x 28 to 24 x 36	26.00	24.00	21.75	
70 26 x 36 to 26 x 44	27.50	26.00	22.50	
80 36 x 46 to 30 x 50	30.00	28.00	24.50	
84 30 x 52 to 30 x 54	31.50	29.00	26.00	
90 30 x 56 to 34 x 56	33.00	30.50	28.00	
94 34 x 58 to 34 x 60	35.00	34.00	31.00	
100 36 x 60 to 40 x 60	38.00	36.00	34.00	

Sizes above—$15 per box extra for every 5 inches. Discount 80 %.

PAPER STOCK, &c.

(Dealers' Selling Prices.)

	Cents ₩ lb.
White Shirt Cuttings, No. 1	6¼ @ 6½
" No. 2	5¾ @ 5¾
Mill Assorted Whites	5 @ 5½
Unbleached Muslins	5¾ @ 6
City Whites, No. 1	3½ @ 4
City Whites, No. 2	1¾ @ 2
New Canton Flannels	4½ @ 4¾
New Seconds, light	3¾ @ 4
" dark	2¾ @ 3
Cotton Canvas	4½ @ 4¾
Linen Canvas No. 1	4 @ 4½
Seconds, City No. 1	1¾ @ 1¾
Seconds, City No. 2	1 @ 1¼
Colors, ₩ cwt	40 @ 50
Manila Rope	2½ @ ....
" Tarred	2½ @ 2¾
Gunny Bagging, No. 1	1¾ @ 1¾
" No. 2	1¾ @ 1¾
Kentucky Bagging	.... @ ....
Burlap Bagging, No. 1	1¾ @ 1¾
Tar Shakings	1¾ @ 2
Hemp Twine Stock	2¼ @ 2¾
Hard White Shavings, No. 1	3½ @ 4
Soft White Shavings, No. 1	2¾ @ 2¾
White Shavings, No. 2, Soft	2¼ @ 2¾
Mixed Shavings, part White	1¾ @ 2
Ledger and Writing	2¾ @ 2¾
Solid Stock	1¾ @ 2
Book Stock, No 1, light	1 @ 1¾
Old Newspapers	1¼ @ 1¾
Pure Manilas	1¾ @ 1¾
Bogus Manilas and Hardwares, cwt	60 @ 100
Commons, ₩ 100 lb	65 @ 75
Binders' Board Cuttings	½ @ ¾
Straw Board Cuttings, ₩ cwt	65 @ 75

PAINTS, OILS, &c.

Paints.

Black, Lamp—Coach Painters'	₩ lb 23 @ 24¢
Ordinary	6¢
Black Ivory Drop, fair	13 @ 15¢
" " best	20¢
Black Paint, in oil	kegs, 8¢; assorted cans, 11¢
Blue, Prussian, fair to best	40 @ 55¢
" " " in oil	45 @ 55¢
" Chinese dry	70¢
" Ultramarine	18 @ 30¢
Brown, Spanish	14¢
" Van Dyke	10 @ 12¢
Dryers, Patent American	asst'd cans, 9¢; kegs, 7¢
Green Chrome	15 @ 23¢
" in oil	14 @ 18 @ 25¢
" Paris	good, 20¢; best, 25¢
" " in oil	good, 30¢; best, 35¢
Iron Paint, Bright Red	₩ lb 2½¢
" Brown	" 1½¢
" Purple	" 3¢
" Ground in oil, Bright Red	6½¢
" " Red	5½¢
" " Brown	5½¢
" " Purple	6¢
Litharge	6½¢
Mineral Paints	.2 @ 4¢
Orange Mineral	10¢
Red Lead American	6½¢
" Venetian (Eng.) dry	$1.65 @ $1.7
" " in oil	asst'd cans, 11¢; kegs, 8¢
" Indian Dry	9 @ 12¢
Rose Pink	.10 @ 13¢
Sienna, American Raw, powdered	4¢
" Burnt, powdered	4½¢
" " in oil	.10 @ 16 @ 20¢
" Raw	.11 @ 15 @ 25¢
Umber, Burnt, powdered	4 @ 8¢
" " in oil	9 @ 12 @ 15¢
" Raw, powdered	4 @ 7½¢
" " in oil	9 @ 12 @ 15¢
Vermilion, Chinese	90¢
" English	53 @ 58¢
" American, Common	15¢
White Lead, American, pure dry	6¢
" " in oil	7 @ 7½¢
White Paris, English Prime	2 @ 2½¢
Yellow Ochre, French	$1..5
" " in oil, asst'd cans, 11¢; kegs, 8¢	
" Vermont in casks, 1½¢	
Yellow Chrome	17 @ 27¢
" in oil	14 @ 18 @ 20¢
Zinc White, American No. 1, dry	6 @ 6¢
" No. 1, in oil	8¢
" French (Paris Dry)	5½ @ 7¢
" in oil	.10 @ 11¢

Oils.

Bleached Whale, ₩ gal	52¢
" Sperm, ₩ gal	180¢
" Elephant, ₩ gal	65¢
Drilling	55¢
Empire Cylinder	60¢
Engine	40¢
Fish Oil, Pressed	35¢
Lard, Prime Winter	51¢
" No. 1 Extra	44¢
Linseed, Raw, in casks and bbls	43 @ 44¢
" Boiled, " "	46 @ 47¢
" Western, " "	39 @ 40¢
Calcutta	1¢
Machinery	30¢
Miners' Oil	60¢
Neatsfoot	50¢
Signal	48¢
Tallow	4½ @ 5¢
West Virginia	9 @ 15¢

Sundries

Asphaltum, Cuban, ₩ lb	5½ @ 6½¢
" Egyptian	8 @ 9½¢
Benzine	₩ gal. 8½ @ 9½¢
Chalk, ₩ 100 lb	80¢
" Block	3½¢
Crucibles No. 14 and upward, per number	35¢
Grain Emery, 300 lb Kegs	4 @ 4½¢
Flour Emery, finest quality	2½¢
Frostings	30 @ 35¢
Glue, White	24 ¢ 30½
" Sheet	20¢
Glaziers' Points, Zinc, ₩ box	$4.75
Gum, Copal	30¢
" Damar	20¢
" Shellac, English	30¢
" " " dark	25¢
Mineral Wool, ordinary, ₩ lb	1 @ 1½¢
" " extra	3 @ 3½¢
Pumice Stone, selected Lumps	3 @ 6¢
" " powdered	2¾ @ 3½
Pine Tar, bbls	$2.25 @ $2.50
Pitch	$1.50
Plumbago E. L. Po., ₩ lb	4 @ 6¢
" American, ₩ lb	6 @ 10¢
" Gun Powder Glazing, ₩ lb	10¢
" Shot Polish ₩ lb	10¢
Putty, in bladders	2½¢
" in bulk	1½ @ 2
Rosin—Common and Good—Strained	$1.55
" E & F	$1.60 @ $1.70
" G & H	$1.80 @ $2.25
" I & K	$2..0 @ $2.75
" M & N	$3.25 @ $..50
Spirits Turpentine, ₩ bbl	.55 @ 55¢
Stove Polish, Dixon's	₩ gross $6.50
" Rising Sun	" 5.50
" Gem	" 4.00
" Jet Black	" 3.00
Waste, No. 1 Cop	9¢
" No. 1 White Machine	8¼¢
" No. 2 White Machine	8¼¢
" No. 1 Colored	6½¢
" No. 2 Colored	6¢
" Washed Machine	8½¢
Whiting, Spanish, ₩ 100 lb	60¢

MECHANICAL.

An Elastic Coupling.

One of the foreign papers recently described a system of shaft coupling intended more particularly for driving dynamos direct from the crank-shafts of engines, and which was claimed to admit of the two shafts not being exactly in the same line, and also not to transmit the longitudinal vibrations of one to the other, thus insuring smoothness of action. The coupling, as described, consists of two flat disks or face-plates, one keyed on each shaft and facing the other, and each carrying a number of pins or driving-dogs placed in circles concentric with the shaft. The number of dogs on each plate is the same, but on one plate (the driving one) they are at a greater distance from the center than on the other. If a closed band or link of any sort is placed over each corresponding pair of dogs on the two face-plates it is evident that the driving plate will take the other round with it, even if the center lines of the shafts do not exactly coincide. By using india-rubber rings for these bands the coupling becomes elastic, and any increase or decrease of resistance will not immediately be transferred to the driving-shaft and reduce or increase its speed, but will first act on the elastic bands, extending them or allowing them to contract, and *vice versa*, so that all such changes are greatly softened in their effects on the driving or driven shaft. To facilitate the play of the bands the dogs are provided with loose gun-metal bushes, round which the bands pass. Each shaft is also free to move endways in its bearings without transferring its motion to the other.

The coupling is advantageously used for driving dynamos direct, as, in addition to the advantages enumerated above, it permits the electrical insulation of the dynamo; for instance, in the electric lighting of vessels, where the return lead is suppressed and replaced by the hull. Every engineer knows the difficulty of keeping four shaft bearings in exactly the same center line, which is avoided by this coupling. By varying the number of dogs and india-rubber rings and the diameters of the face-plates the coupling can be adapted for any power. The system of coupling two shafts by connecting two cranks on their ends by a short link embracing the crank pins has been frequently used in ships' engines for coupling the paddle-wheel shafts, and Mr. Raffart's coupling is, except as far as the use of elastic bands is concerned, simply a multiplication of such crank pins, possessing, however, the advantage of being perfectly balanced, and therefore adapted for high speeds. It may also be considered a safe coupling, as the breakage of one or two of the rubber rings, it is thought, will not endanger the working of the rest, and new rings can be put on conveniently. A drawback appears to be that when the speed of the engine is reduced the dynamo or other shaft may possibly overrun it to such an extent that the position of the bands is reversed and the engine dragged by the second shaft, and that when stopped in this position the elasticity of the bands may turn the second shaft in the reverse direction. This may cause inconveniences. The coupling, we understand, has been used for driving dynamos.

Most Economical Cut-Off in Locomotives.

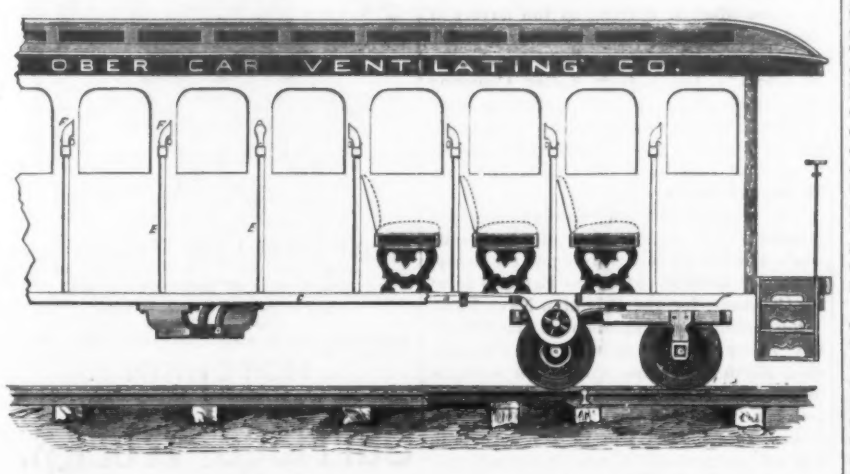
Mr. David L. Barnes, of the Rhode Island Locomotive Works, writing to the *National Locomotive and Car Builder* concerning the most economical point of cut-off in locomotives, says:

The conclusion was not reached directly from experiments made for that purpose, but from a miscellaneous lot of data which I have been gathering for a long time. When I began to look upon this most vital point in the economy of the locomotive I found an almost perfect void of reliable information. During the last three years I have collected much that bears directly upon the subject, and they almost universally point to the great loss of early cut-offs, and to the laws of the loss due to cylinder condensation. Several extensive experiments made for the purpose of determining the loss due to early cut-offs at different speeds, &c., show the maximum economy of a stationary engine of the same size as the ordinary locomotive to be realized at about 33 per cent. cut-off; and, although the higher steam pressure and greater piston speed of a locomotive conduce to greater economy, the presence of the large quantities of water in the steam due to priming and the exposed condition of the cylinders and piston-rod, inferior lagging and a few other considerations overbalance these and raise the point of maximum economy in the average locomotive cylinder to about 38 per cent. of stroke, while the smaller and slower moving pistons are raised undoubtedly more than this—in some extreme cases, without doubt, to 60 per cent. I have recently found from experiments that I had long since concluded that there was a point of cut-off where the common link motion was equal in economy to a Corliss valve gear, but this point is below the one of maximum economy. This point of equal efficiency is nearer the point of maximum economy in the locomotive than in the best stationary engines. That is, if some one did succeed in putting a Corliss gear or its equivalent on a locomotive, the point where the economy of the locomotive and the Corliss valve gear would be the same would be nearer the maximum economy than in the stationary engine. This is partially owing to the design of the locomotive boiler, causing excessively wet steam, which is wire-drawn into dryer steam in passing through the valve governed by a common link motion.

The Ober Car Ventilator.

To those interested in car ventilation the annexed engravings relating to a device for this purpose, recently brought out in New York, will be found to present several points of novelty and merit.

The apparatus is known as the Ober car ventilator, and, as shown in Fig. 1, requires very little explanation. The cut represents a skeleton car, showing the different pipes and connections in working order. Air is taken in under the car by means of two fans, A, placed side by side on the same shaft and driven by friction connection with the car axle. From these fans



The Ober Car Ventilator, Made by the Ober Car Ventilating Company, New York.—Fig. 1.—Diagram Showing Fans and Connections.

the air passes through two pipes, B, running along the bottom of the car, and is delivered into the tank D, containing water, and ice, if required, and capable of holding about 100 gallons. Here the dust held in suspension by the air is deposited, and the latter as it enters the car is fresh and clean. The two air-pipes C running along the sides of the car are in direct communication with the tank D, and from them issue the vertical ventilating-pipes E E, placed as shown at each side of the car and furnished with suitable outlets, F F. These can be turned in any direction at the will of the passengers, and the supply of air may be cut off or regulated by the damper, as desired. The pipes B, it should be added, are attached to the discharge-pipes of the fans by flexible connections G,

Fig. 2.—Ventilator Outlet.

so as to permit of motion of the car truck without injury to the ventilating system. The pipes E are 2 inches in diameter, while the square section ducts C measure 5 x 7 inches. As it is possible that on roads where very much dust is encountered excessive accumulations in the tank D with consequent trouble might result with the arrangement shown in the cut, where the air supply is taken in under the car, the builders propose to close the sides of the fans and to lead the suction-pipe to the back of the car and to a short distance above the level of the platform. When the train is running at an average rate of speed the ventilator, it is claimed, will furnish a fresh supply of air throughout the car every 20 seconds, insuring perfect, continuous ventilation. It will, of course, be understood that the use of the device entirely obviates all need of opening car windows, winter or summer, for purposes of ventilation, thus avoiding the dust, cinders and smoke so offensive and often dangerous. A number of well-known railroad men have thoroughly inspected this ventilator, and, we understand, think very favorably of it. The management of the Boston and Lowell Railroad have equipped all of the cars of their White Mountain train with the ventilator, thus giving the public an opportunity to thoroughly test its merits. The device is being put on the market by the Ober Car Ventilating Company, represented by Mr. John Q. Maynard, of 12 Cortlandt street, New York.

Rymers.

In modern machine making, says the *Mechanical World*, rymers are used exclusively for truing holes, bringing them up to their exact size, and making them perfectly straight and circular. Their use for merely enlarging a hole drilled too small, which formerly was one of the main objects for rymering, is now confined to jerry shops. Ordinarily a hole is drilled large enough where no tight fit and perfect accuracy is required, and is drilled very slightly under size only in those cases where rymering out is intended, and the rymer has only to remove a minute quantity of metal, which it ought to do by scraping or cutting away very fine shavings. Many rymers, however, in consequence of their faulty form, act more by compressing and grinding, especially in brittle metal. The manner in which they act, whether by scraping, cutting or compressing, depends on the shape of the edges of what we call the teeth, and the accuracy of the holes on these and the general shape and number of the teeth. A tooth will cut when the front side is radial or forms an acute angle with the circumference; its action will be scraping when the angle is more obtuse, but when the latter exceeds a certain limit or the edge becomes blunted by wear the action becomes simply a squeezing and grinding one. The scraping rymers are usually made as squares or pentagons, a larger number of flat sides making the angle too blunt, but these rapidly become converted into the squeezing sort. Although this squeezing may result in a smooth and true hole, it takes a great amount of power, as overy one who has worked with such rymers has experienced, and leads to a rapid wear of the rymer. A better form of the scraping rymer is made by fluting it with large triangular grooves, so that similar edges are formed as on a square rymer, but in a greater number. Generally, however, cutting rymers may be considered preferable for getting through the work, though they have to be used carefully, as they easily cut in too deep and stick fast. The number of cutting edges ought always to be uneven, as in that case in the untrue hole the rymer always bears with three edges, and not with two only, and consequently receives a better guidance. The chief fault of rymers with an even number of teeth, however, is that an unevenness in the hole acting on one edge forces the opposite edge against the metal and causes it to cut where it should not. For this reason also rymers having circular parts on their circumference and cutting teeth only in the remainder must be pronounced bad.

Fluted rymers made with a large number of triangular grooves, with both sides at the same angle to the radius, occupy a middle position between the scraping and cutting tools, and are the best rymers for obtaining accurate work without excessive labor. They can be turned in either direction, and are very well guided. Their only drawback is that the flutes do not give sufficient room for the scrapings, and become filled up where lubricants have to be used. But for cast iron they are decidedly the best. Sometimes they are made with one side radial, in which case, however, the number of teeth has either to be greatly reduced, or else they have to be made very acute, and are difficult to harden to such a temper that the teeth do not break out. For wrought iron the grooved rymer, with three or five grooves, may be considered the best kind. There are two sorts of these at present, the ordinary circular sort and a flat sided kind. In the former the groove is cut so that the cutting edge is radial, and a portion of the circumference next to the edge is left circular, and should be accurately ground circular, the remainder being backed off towards the following groove. This rymer has ample room for the shavings, and possesses the advantage that it can be sharpened several times, as the circular parts do not suffer much wear, and the rymer keeps up to size for a considerable time. The grinding for resharpening, however, should be done with special tackle, so as to keep the cutting side of the grooves radial and preserve the proper angle; if reground by hand on a grindstone the angle is apt to become more and more obtuse, so that the rymer degenerates into the objectionable squeezing kind. Sometimes these rymers are backed off right from the cutting edge. This has the advantage of giving a sharper angle of about 80°, but, of course, such rymers cannot be reground without the diameter becoming reduced. As the cutting angle is also altered in the resharpening, flat-sided grooved rymers have been latterly introduced, also specially called ground rymers. These are polygonal in shape, with grooves along the corners of the polygons, the cutting sides of the grooves being radial and the cutting angles 80° or less. Such rymers are sharpened by grinding the outsides, and the cutting angles thus remain the same, but the diameter is altered, and special tackle is required for grinding. We do not think that these possess any special advantage; the preservation of a sharp cutting angle does not appear to us of importance, as the action of a rymer should be more scraping than cutting to produce a smooth, true hole. The only exception to this is in boiler and bridge work, where perfect accuracy of the hole is no object, and a cutting rymer gets more quickly through its work. The grooves, which are mostly made straight, are latterly often made helical or twisted. There is some advantage in this, as the bearing points of the tool on the metal do not fall into a line, but continually change in position, and a truer hole is likely to result. The twist is sometimes—in fact oftener than not—made in the wrong direction. It should not be so that the rymer is screwed into the hole by it, as this causes it to cut into the metal where not required, but in the opposite way, so that the rymer is screwed out, as it were, and only forced in by the pressure laid on it.

Pile Driving.

In an article on pile driving, published in the *Railway Review*, Mr. W. L. Clements remarks:

Some pilework recently driven shows that piles driven with the steam hammer have greater capacity for sustaining loads than those driven with the drop hammer The Michigan Central Railroad Company had driven some time ago several hundred piles to protect their bridges from ice. Part were driven by a steam hammer and part by a drop hammer. Some are in clusters and others are standing alone. Those withstanding the lift of the ice are invariably the ones driven by the steam hammer. It would appear that the earth is more violently disturbed by the quivering blow of a long drop and heavy hammer, and the frictional resistance of the pile thereby decreased. The steam hammer, on the other hand, gives a short, rapid tapping to the pile and rather presses it into the ground without intervals of rest, thereby keeping the earth in its natural state. This theory, however, has not been sufficiently substantiated by further experiments, and cannot be stated as a positive fact.

Hanging Shafts.

From an article on shaft hanging in the *Milling Engineer* we extract the following:

In hanging a line of shafting a strong flax fish line is necessary, or even a fine steel wire. The wire, however, has more sag than the line of linen. Of course this sag must be rectified as the hangers are placed, but its chief office is to get the hangers in line. The leveling is done by means of a straight-edge, a parallel-edged board of white pine, 8 inches or thereabout wide. A spirit level on the upper edge of this board, the lower edge resting in the boxes, determines the level from box to box. The string ought not to be lined along the bottom of the boxes, as is sometimes done, because it is difficult to find by the eye just where the center of the box is, but it should be drawn against, or rather along, the edge of the lower box, where it is milled or planed for the junction with the upper half or cap of the box. In leveling hangers a quantity of shingles is better than any other means for "shimming."

After the shaft is in place, with its load of pulleys, it is well to make a final test of level. The long level that had been used in the empty boxes is impracticable now, and even the ordinary carpenters' spirit level cannot be relied upon, for two reasons—the pulleys may not permit its length to pass between them to rest on the shaft, and because the workman cannot know whether the level is on the very top of the shaft or not. If it rests on the shaft diagonally in the slightest degree it will not register level. To obviate this difficulty it is well to have on hand at all times a rectangular block of cast iron, say 8 or 10 inches long by 2 inches square, planed or milled perfectly true on at least two opposite faces. Then have one of these faces planed to a V recess—a right-angled gutter from end to end. When this recessed side is placed on any shaft from 1 to 3 or more inches in diameter the block will be in perfect line with the shaft, and a spirit level may be laid on it with assurance that it represents the true level of the shaft.

But there is another method which is handy to test the level of shafts at all times. Make a strongly braced rectangular frame, of planed seasoned scantling, long enough to reach from the shaft overhead to the hight of a man's shoulders. The two side pieces of the frame have feet, at right angles, at their upper ends, so that the frame may be hung, by these feet, on the shaft. The side pieces have a cross bar at the bottom and one or more between that and the top, sufficient to give the frame absolute rigidity. The frame may be of a convenient width for handling—3, 4, 5 or 6 feet. Now, if this frame is properly made, a spirit level placed on the lower bar for convenience of sight will show, when the hooked ends rest on the shaft, whether the shaft is level or not, and the width of the frame will allow it to be used without interference by the pulleys.

Belting Power.

The following particulars of the leather belting for driving the machinery in the electric-light department of the Inventions Exhibition, held in England last year, may be of interest, as giving the velocities and powers in a particular case: No. 1 belt, 70 feet in length, 10 inches wide, running at 2585 feet per minute, transmitted 120 indicated horse-power; No. 2 belt, 73 feet in length, 15 inches wide, running at 2585 feet per minute, transmitted 170 indicated horse-power; No. 3 belt, 60 feet in length, 16 inches wide, running at 3270 feet per minute, transmitted 200 indicated horse-power; No. 4 belt, 86 feet in length, 24 inches wide, running at 2585 feet per minute, transmitted 350 indicated horse-power; No. 5 belt, 86 feet in length, 15 inches wide, running at 2585 feet per minute, transmitted 170 indicated horse-power; No. 6 belt, 86 feet in length, 15 inches wide, running at 2585 feet per minute, transmitted 170 indicated horse-power.

Heavy Gun Lathes.

The two large gun lathes at the South Boston Iron Works have beds 90 feet long, built up of three sections of 30 feet each. Each section is an iron casting made at the works, 8 feet wide on top, outside of the ways, which are flat and are 14½ inches wide. The bottom is flat also and is 18 inches wide. The lathe-bed rests upon a stone foundation which is about 15 feet feet deep, and in turn is supported by piling. The lathe-bed is bolted together by 16 cast iron cross-ties. The weight of each lathe is about 150 tons and the swing on each is about 10 feet. The lathes can finish up from a 100-ton down to an 8-inch gun, and are the largest in the country.

The Minnesota Iron Company are employing at the mines 1000 men, and the railroad company have at work in the operation of the road and in its maintenance fully 300 more, to say nothing of the men employed in building the 27 miles of the Iron Range now under construction. The Minnesota Iron Company have just put in operation at the mines a Brush electric-light plant for 30 lights, which will illuminate the pits, ore docks and yards so that night work can be carried on as successfully as day work. They are also putting in an additional compressor plant and a number of power drills, which will be in operation very soon, and have added extensive hoisting machinery. They had shipped from the mines by vessel from Two Harbors up to the night of July 8 88,627 tons, and are shipping now at the rate of 14,000 per week. Up to the present time no vessel has been delayed in loading ore at the docks a moment of time in consequence of the weather. On the first day of July there was loaded on vessels from the company's dock 5064 tons of ore, and on one day the boats Alcona and Alta went into Two Harbors at 9 o'clock in the morning and were loaded and steaming down the lake before 8 in the evening of the same day with 2636 tons of ore aboard.

The Speed of British War Ships.

In a recent issue the *Mechanical World* (England) gives some facts and figures bearing on the speeds of British war ships which are of general interest. The advance that has been made since the Warrior was built to steam 14.356 knots, remarks the *World*, though considerable, is not astounding in the face of what has been accomplished in Atlantic steamers; still there is room for congratulation, for we now have war ships that can steam 17 knots on trial. In the mercantile marine there is now less weight than formerly attached to mere trial trips, a progressive trial is even more than interesting, but the crucial test is what speed can be attained on a voyage, or, best of all, all the year round in varying weather. We have before us the result of a mail steamer of upward of 10,000 tons displacement which attains on a voyage a mean speed of 17 knots, much the same as the highest speed of the Collingwood, Howe and Impérieuse, and it may be of interest to our readers to have a comparison of the results:

	Mean draft.	Displacement.	I. H. P.	Speed.	Coefficient of efficiency $\frac{D^{2/3} \times V^3}{I.H.P.}$
	ft. in.				
Collingwood	23 6	8,080	9,573	16.841	201.4
Howe	26 8½	9,658	11,613	16.923	189.3
Impérieuse	25 0	7,645	10,184	17.213	194.3
Mercantiles	24 0	10,415	10,900	17.000	234.3

It will be seen from the above how considerably higher is the coefficient of efficiency in the mercantile steamer than in the war ships, and this would be even higher were a trial trip result of the latter vessel given, so that clearly the speed obtained on Her Majesty's warships is not an economical one. This is largely due to the limited length of these vessels, 325 feet between perpendiculars being the longest, or nearly 200 feet less than the mercantile vessel. In the Howe's trial results we find that as the speed increases the coefficient falls, clearly demonstrating that the power does not vary always as the cube of the velocity. The results were:

No. of trial.	Speed in knots.	Coefficient of efficiency $\frac{D^{2/3} \times V^3}{I.H.P.}$
1	8.938	281.2
2	10.250	285.4
3	13.386	265.0
4	15.873	220.1
5	16.923	189.3

If the power always varied as the cube of the speed the indicated horse-power would have been as in the second column of the following table:

No. of trial	I.H.P. calculated to vary as the cube of velocity.	Actua. I.H.P.
2	1,734	1,709
3	3,861	4,099
4	6,442	8,330
5	7,800	11,613

The actual indicated horse-power was, however, in all cases save at the 10 25 knot speed in excess, and gradually increasing as the speed increased. Whether the maximum length "by common consent" accepted for "first-class ships" could not be with advantage increased, is a question of moment. We are inclined to the opinion that war ships are not now required to maneuver with sail-power. Especially in the case of twin screw steamers could the length with manifest advantage be increased, seeing they are more easily maneuvered than steamers with single propellors. No doubt in many respects there have been great improvements of late years, especially in the reduction in the weight of machinery—from 1 ton for 6.1 indicated horse-power in the Warrior to 10.08 indicated horse power per ton in Howe—and further economy of coal consumption is now about to be attained, the compound engine giving place to the triple-expansion engine. A greater impetus will be given to a "high speed of piston," and probably it will be found proportionately small diameters of propellors will given even better results than yet attained. To some extent this has been experienced in the Howe, as on comparing her with the sister vessel Collingwood we find with 2 feet 1 inches less diameter of propellor and nearly 100 tons less weight of machinery upward of 2000 additional indicated horse-power was obtained.

The Michigan Mining School, at Houghton, Mich., has sent out its prospectus. Mr. J. N. Wright, of Calumet, is president; Thomas L. Chadbourne, of Houghton, secretary, and Allen F. Rees, treasurer. Mr. Albert Williams, Jr., formerly Chief of the Division of Mining Statistics and Technology of the Geological Survey, has been appointed principal and has already chosen competent associates. Tuition is free to residents of Michigan. The regular course will be two years, with a post graduate course leading to the degree of mining engineer after sufficient practice. The school starts off under the best of auspices, with a fairly equipped treasury and a splendid field of usefulness.

The *Official Gazette* of the Patent Office publishes the full decision of Judge Butler, of the United States Circuit Court, rendered on the 14th of May, 1886, in the cases of Asmus *vs.* Furman and Asmus *vs.* Alden, which involves the validity of the Luermann cinder notch patent, dated November 5, 1869, and reissued November 24, 1868. Judge Butler upholds the validity of the patent as reissued, and a decree was entered for the plaintiff.

During the past 14 months the British Admiralty has ordered more than 100 Willans engines for electric lighting on board ship. The Willans engine is of the rotary type, and has been very aptly described as a steam turbine. We may add that the selection of the type of engine has not been governed by considerations of steam economy alone.

Experiments have been made at the works of the Western Nail Company, Belleville, Ill., with mixtures of Missouri, Warrior (Tenn.) and Sloss (Ala.) pig irons to test their value as raw material in the Clapp-Griffiths converters.

Recent Foreign Improvements in Gas Engines.

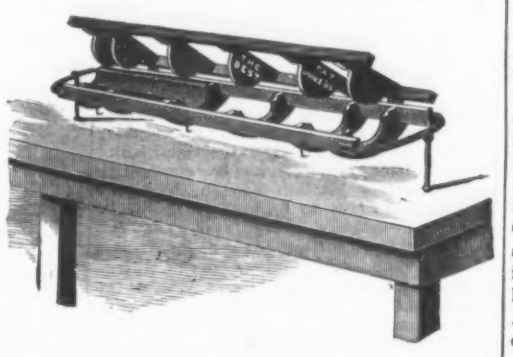
Refering to the more recent improvements in gas engines which have been made in England, the *English Mechanic* says: The patents are readily divisible into three classes, those which refer to improvements in the arrangements for compressing the charge, improvements in the valves and valve gear, and those which have reference to the nature of the combustible used. High piston speed and more rapid expansion are aimed at by most of the patentees who understand the subject. Thus Mr. C. W. King's patent, No. 1,700, 1885, has a moving cylinder within the fixed cylinder, the former being coupled to the crank-shaft by two connecting-rods. A trunk-piston working in the moving cylinder is connected to a crank placed opposite, or at an angle of 180° to the cranks actuated by the moving cylinder. The latter in making its instroke forces a charge of mixed air and gas through a check-valve into a chamber, and when it just about reaches the end of the fixed cylinder two ports coincide and admit the combustible mixture into the moving cylinder, where it is compressed by the movement of the trunk-piston. Just as the two pistons—that is, the moving cylinder and the trunk-piston—commence to recede from another the charge is fired and they are driven forcibly apart. When the pistons approach one another a fresh combustible charge is drawn through the admission valve into the space in the fixed cylinder behind the moving cylinder, and that is compressed and forced out, as explained above, when the cylinder is returned by the force of the explosion. The valve arrangements are automatic—the exhaust being uncovered by the movement of the trunk-piston, while the igniting-valve is opened by the pressure due to the compression; the mixture is thus fired when most highly compressed. Patent 16,698, 1884, relates to one of Mr. Turner's non-compression engines, and the object is to insure early explosion and expansion and obtain high speed. Two slide-valves are placed face to face, and so operated that while one is making its outward stroke the other is traveling in the contrary direction, and the opening and closing of the admission and lighting ports are thus effected in less time than when only one valve is employed. Patent 3199, 1885, by C. G. Beechey, relates to those engines which have a clearance space behind the working cylinder when at the end of its instroke. This space is to contain the compressed charge, and the object of the invention is to get rid of the exhaust effectually and obtain an explosion at every revolution of the shaft. To effect that result a central outlet in the form of a tube projects into the working cylinder, and through that the products of combustion are driven during the early portion of the instroke of the piston, the fresh charge of combustible mixture which is being forced into the clearance space assisting to expel them.

Patent 610, 1885, has been taken out on behalf of Mr. Lenoir, of Paris, and relates to portable gas engines for agricultural and other purposes. In this arrangement there is a combustion-chamber separate from the working cylinder, which is clothed with non-conducting materials, because, while it is desired to keep the cylinder at a temperature below that of boiling water, the temperature of the combustion-chamber may be as much as 750° F. The explosive mixture is passed directly into the working cylinder and is compressed into the combustion-chamber by the motion of the piston. The ignition is said to take place gradually, commencing at the surface of the piston and proceeding toward the end of the combustion-chamber furthest from the cylinder, the chamber thus receiving all the calorific effects of the explosion and consequently heating up the next charge. This preliminary heating of the gaseous mixture produces complete combustion and a more advantageous utilization of the elastic force of the combining gases. Messrs. McGhee and Magee (6763, 1885), employ a receiver with an elastic diaphragm in connection with the cylinder. During the outstroke of the piston a charge of gas and air is admitted to the cylinder, a portion of which is pressed into the receiver during the instroke, while the remainder is compressed at the back end of the cylinder. Just as the piston commences its outstroke the charge is exploded, but it is only at alternate outstrokes that the charge in the receiver can be drawn into the cylinder, the object of the receiver being to prevent a vacuum in the cylinder and to afford space for the greater expansion of the charge. Mr. S. Wilcox, of Brooklyn, U. S. A., has completed several patents recently, in one of which (15,875, 1885) he provides a separate combustion chamber in order to overcome the difficulty met in maintaining an igniting flame. This chamber is lined with refractory material, and has a number of cellular chambers which make up a "water jacket." This device is mainly for use with petroleum as the combustible, and so is the same inventor's patent 15,874, 1885, in which an air-pump forces air into a receiver, where it is heated and then driven through valves over a row of burners consisting of a series of sheets of wire gauze. The air is there thoroughly saturated with the combustible liquid, and the charge is passed into the working cylinder through valves of the well-known Corliss type. In another of Mr. Wilcox's patents the piston is provided with a trunk passing through a stuffing-box and forming an annular space which serves as an air-pump chamber. A regenerator composed of a series of metal plates is placed between the valve-box and the combustion-chamber and retains part of the heat from the exhaust. The entering air, already heated by contact with the hot cylinder, has its temperature still further raised by passing through the generator.

On behalf of H. Hartig, New York, a patent has been obtained (9801, 1885) for a simple arrangement in which the piston-rod is connected to the piston by an oscillating or roller valve. On one side of the cylinder a port admits gas and air, and on the other is an exhaust opening. The roller-valve having portions of its face cut out thus alternately opens to admit the mixture and dissipate the products of combustion. Mr. C. Kempster patents (1581, 1885) a device in which there are eight exploding chambers, so that four explosions are obtained at each revolution, the two sets of four chambers being charged alternately, each chamber being refilled as soon as its fellow chamber has been fired. This engine is to be worked by a hydrocarbon liquid, as are many of those recently patented.

Eave-Trough Clamp.

The accompanying cut shows a general view of a recent idea in trough clamps. The device is manufactured by Seward & Noel, Bloomington, Ind. The advantages which the makers claim for this article include among others the rapidity with which sections of eave-troughs may be put in place and temporarily held while being soldered, and also that the clamp is so arranged that both sides of the joint between the sections of the trough will be exposed, so that either or both can be soldered without changing the position of the sections of the clamp. Another advantage is that the clamp is constructed in such a manner that the bead may be on either side of the trough or on both sides. The clamp is operated by detachable bails mounted in the standards, so as to be easily rotated, whereby the convex and concave sides are presented to the workmen, as the requirements may be. The object in making the bails detachable is so that the clamp may be removed and set aside in some corner of the shop when not wanted in use. Another object is to allow two or more sections of the trough, which would extend beyond one or both ends of the clamp, being placed in the clamp, so as to be soldered together. This device is well spoken off by many who have used it, and it, seems to have been carefully considered by the inventors, who are practical men and well acquainted with the requirements of eave-trough makers.



Eave-Trough Clamp, Manufactured by Seward & Noel, Bloomington, Ind.

Can for Transporting Milk.

We illustrate herewith a can for transporting milk, which is manufactured by Herman Wuppermann, Pinneberg, Holstein, Germany, and which is described as being made of sheet steel and of great solidity. It is struck up of two pieces. Owing to the peculiar construction of the can it is claimed to possess several advantages over the ordinary article. One of these is the joining of the stamped lower part and the stamped upper part with the neck, which makes quick and thorough cleansing possible. There is but one horizontal seam in the body of the can, and this is secured by the central iron hoop which also serves to cover the joining. This seam is carefully made and is easily reached in cleaning. All the interior of the can, we learn from the maker's circular, is visible, and in cleaning any damage to the

Can for Transporting Milk, Made by Herman Wuppermann, Pinneberg, Holstein, Germany.

can not visible from the outside is easily ascertained. The can is stayed with three iron hoops around the body and one around the neck, as well as a cross underneath the bottom. The iron hoops around the body, as well as that around the neck, protect these parts from injuries and enhance the usefulness of the can. The cross on the bottom serves the same general purpose as the hoops and prevent it from bulging out. This cross in connecting with the hoops also maintains the capacity of the can, which without these supports would be subject to essential variations. In order to admit of a free circulation of air and to keep the contents of the can at as equable a temperature as possible, the foot rim is provided with three ventilating holes. In the construction of the can no rivets are used save those employed in fastening the ears and the neck rim. The ears are very strong, and, as will be seen by the engraving, the bail is bent up in the middle for suspending the can. The cover is stamped out of a piece of very strong sheet steel, and its interior, lower and tapering rim are beaded over strong wire in such a way as to render all the interior surfaces accessible. Both bending and bulging are prevented as far as possible, and the effectual closing of the can, the maker asserts, may safely be relied upon. The rim is stayed in a similar manner. In opening the can the cover is grasped tightly with one part of the hand, while with the other fingers the bail is seized and the hand closed, which draws the cover straight up. In order to prevent the loss of milk in transportation, and to effect a double closure of the cover, the neck of the can is provided with a bead upon which the lower part of the cover rests. This bead also serves to show the contents of the can, which when filled up to the mark holds 5½ gallons. The can weighs about 14½ pounds.

NEW PUBLICATIONS.

LABOR, LAND AND LAW. A Search for the Missing Wealth of the Working Poor. By Hon. William A. Phillips. New York, Charles Scribner's Sons. Price $2.50.

Mr. Phillips, who was a member of the Committee on Public Lands in the Forty-third Congress, and of Banking and Currency in the Forty-fifth, in his "Search for the Missing Wealth of the Working Poor" has scoured the records of every land, spreading the fruits of his industry in the first 300 pages of his work. He speaks of land and labor in ancient Israel, in the ancient empires and in the Middle Ages. He attempts to show how the Christian and Mahammedan systems affected society, and then turns to the land system in the leading countries of modern Europe, devoting to this review fully one-half of his work. Mr. Phillips deals with the subject from his point of view, drawing from it the lesson that land was acquired by violence and fraud in Europe by an aristocracy which has shunned no means, however vile, to perpetuate a system imposing upon the many the task of supporting a few in idleness and luxury. He holds up this distorted picture with the evident purpose of frightening his readers into the belief that we are fast drifting into a condition of affairs where a similarly-placed class is growing up in this country. Mr. Phillips is a victim of much of the claptrap which is now flooding the country with lachrymose sympathy for the so-called working classes. We have been growing richer, but, according to Mr. Phillips, all this accumulated wealth has gone to a few, while those who work hardest are growing poorer. He attacks well-known abuses like the watering of railroad and other capital, the fraudulent alienation of the public lands, the stock gambling, &c., but he goes too far in many respects. Any one who has noted how the estates of many corporations have gone into the hands of receivers will deny that "the people have to pay the railroad debts just as surely as they pay the national taxes." Mr. Phillips thinks that the profits of machinery should go to the laborer after a fair compensation to the management, evidently on the ground that "the rarest artistic skill is the gift of the mechanic." It is not. The rarest skill is that of the manager of the great modern industrial establishments, the business men at their head. Mr. Phillips has been misled, or is trying to deceive when he asserts that as a body those whom he calls the working classes did not get their share of the increased wealth during the last 20 years. Let him make a canvass among those who were laborers and mechanics then, and he will probably find a large proportion of them in the ranks of the middle classes, or their heirs in the enjoyment of greater property. They have risen and their place has been taken by hundreds of thousands who have since come to this country to share in its growing prosperity. Nothing is more dangerous and we believe further from the truth than to encourage the idea that a few are grasping the labor of the many, especially since the accumulation of great wealth by a few conspicuous men gives encouragement to that belief. That is a minor phase only; it does not prove a rule. The circumstances of our wage-workers are better to-day than they were, if due allowance is made for the fact that it is not fair to compare them as they are in a period of depression like the present. The requirements of the mass of the people, so far as the necessities and the luxuries of life are concerned, have developed amazingly during the last 20 years, and where discontent now exists in many instances there would have been entire satisfaction with the same conditions then. Mr. Phillips, in fostering the idea that injustice is being done which calls for fundamental changes in land tenure, in the conducting of manufacturing, &c., is doing harm. No one will deny that there are many abuses. Let them be attacked, but so long as Americans have energy and self-reliance enough to depend upon their own exertions to carve out their own future radical changes are not necessary.

The new amendments to the shipping law of June 26, 1884, designed to abate the evils of the advance wages system, and which are now in effect, provide that stipulated allotments of wages may be given to be paid when earned during the voyage. Wages shall not be paid before leaving the port of shipment before they have been earned; but a seaman may stipulate in his shipping agreement for allotment of all or any portion of his wages, not exceeding $10 a month, to his mother, wife or other relative, or to an original creditor in liquidation of any just debt for board or clothing which may have been contracted previous to his shipping. These allotments of wages are to be paid only to and by officers authorized by act of Congress, and under such regulations as the Secretary of the Treasury may prescribe.

Coal Market.

The event of the week is a meeting of representatives of the leading Anthracite Coal companies, held in Philadelphia, 20th inst., to adjust the allotment for August, which after debate was fixed at 2,500,000 tons, a reduction of 500,000 tons from August of last year. Those present were Frederick A. Potts, of the New York, Susquehanna and Western; W. H. Sayre, of the Lehigh Valley; T. M. Richards, of the Reading; Mr. Hart, of the Delaware and Hudson, and F. C. Yarnall, of the Lehigh Coal and Navigation Company. The Philadelphia *Press* says: "The Pennsylvania Railroad was not represented, but it was understood that it would not consent to any policy of restriction, and would continue to carry all the Coal offered it." After remarking upon the small profits realized by the trade during the last two months, the editor says: "The Reading Coal and Iron Company gave away its Coal last month and lost $138,000 besides. The allotment of the small tonnage of 2,500,000 in August will to some extent remedy the evil. It will have the effect of stirring up the buyers of Coal, who generally become anxious as fall approaches, and may result in an advance in prices." The Lehigh Valley Company have resolved to suspend operations until August 1, having exceeded their quota to the extent of 146,000 tons. Some of the private companies, like Pardee & Co., are sold out far beyond their production.

The Government on Monday awarded contracts for 48,000 tons of Anthracite Coal. The lowest bids were $3.65 for Lump, $3.28 for Broken, $3.64 for Egg and $4.25 for Chestnut, for the Brooklyn Navy Yard.

Respecting the completion of the Schuylkill Valley line of railway the Philadelphia *North American* foresees a struggle between the Pennsylvania and Lehigh Valley railroads and the Coal combination, the former refusing to join in any scheme to restrict production. A new Coal syndicate, headed by E. R. Chapman, of New York, has purchased 500,000 acres of Coal land in East Tennessee, with the design of supplying the coast steamers from the leading depot at Brunswick, Georgia.

According to the official figures the stock of Coal on hand at tidewater shipping points June 30 was 706,736 tons, showing an increase during June of 86,285 tons, and it is stated that since July over 100,000 tons additional have gone into the tidewater accumulation. The total amount of Anthracite Coal sent to market for the week was 497,557 tons, compared with 686,845 tons in the corresponding week last year, a decrease of 189,288 tons. The total amount of Anthracite mined thus far in the year 1886 is 15,282,894 tons, compared with 13,711,345 tons for the same period last year, an increase of 1,571,549 tons. The shipments from the mines of the Cumberland Coal region for the week ending July 10 were 65,672 tons, and for the year to that date 887,514 tons, a decrease of 482,628 tons as compared with the corresponding period of 1885.

A submarine cable to Australia is proposed as a sort of adjunct to the Canadian Pacific Railway. The idea is to lay the cable from Vancouver, B. C, thence to the Aleutian or Sandwich Islands, in the Pacific; thence to Yeddo, Japan; thence to Hong Kong, and from there to Australia and New Zealand. The only question now to be decided seems to be which is the most practicable route—via the Aleutian or the Sandwich Islands. This is the only remaining link required to put a girdle of electricity round the globe.

CONTENTS.

THE WEEK.

The first through train from British Columbia on the Canadian Pacific Railway arrived in Montreal 12th inst., making the run from the Pacific shore in one week.

The Harlem Bridge Committee awarded the contract for building the proposed new bridge to the Passaic Rolling Mill Company and Myles T. Tierney jointly. The bid was $2,055,000. Only three bids were submitted to the commissioners for the erection of the entire structure, including both the metallic and the stone portions, and of these the bid of the Passaic Rolling Mill Company was the lowest. The other bids were those of the Union Bridge Company for $2,058,000, and the New Jersey Steel and Iron Company for $2,245,000. The construction of the bridge will be begun at once, and the structure is to be ready to be opened to traffic on June 28, 1888.

Chief Engineer Church, of the new aqueduct, in a report presented to the commissioners by General Newton and other engineers who conducted the investigation, is exonerated from all charges brought against him by ex-Construction Engineer Craven.

Carrying petroleum in bulk is becoming an important trade. Six steamers are named which have been adapted to this form of transportation, together having a bulk of 116,700 barrels. The Bakuin, now near completion in England for the Black Sea trade, is the first steamer built expressly to carry oil, the skin of the ship forming the sides of the tanks, which come up to the 'tween decks. She has 12 compartments, engines aft, and will carry 1750 tons of oil. The Spanish steamer Marzo, in the Lisbon trade, is at Philadelphia fitting to carry oil, which will be put in the ballast tanks, arranged to allow for contraction and expansion of the liquid, while the between decks will be filled with coal. The bark Crusader has performed two voyages from New York to London with perfect success, delivering her cargo in prime order. She has 37 cylindrical tanks, containing in all 3700 barrels, each with its supply pipe. On the Thames, in London, a 4½-inch pipe will be laid from the wharf to the storage warehouse.

At the National Drummers' Convention, held in this city last week, it was resolved to dispatch a committee to Washington for the purpose of advocating the passage of Congressman James' bill for abolishing the license tax in the Southern States.

The public debt of Chili has been reduced during the last year nearly $14,000,000, and the budget for 1887, without extraordinary taxation, shows a considerable excess of receipts over expenditures.

"An employer" in a morning paper argues that in these days of fierce competition, with the increase of cost in the transaction of business and the narrowing of all margins of profits, success in the half-holiday movement means for clerks sooner or later a reduction in their wages. They are not skilled laborers, and the market is already overcrowded.

By the bursting of an air compressor in the coal mine at Buchtel, Ohio, while it was being repaired, three men were fatally injured. They attempted to stop a leak in the receiver before turning off the pressure, hence the explosion.

There are eight or ten shrimp fisheries on the bay at San Francisco wholly conducted by the Chinese, and several tons are caught daily. The shrimp are dried in the sun, then beaten with a flail, winnowed to blow off the shells, and then packed in cases for shipment to China.

Several wheat-laden steamers are being dispatched from this port to Lisbon direct, in anticipation of increased import duties by the Portuguese Government on American cereals.

A fall of $15 a share in the market price of Suez Canal shares is attributed to the company's annual report, which showed a decrease of gross revenue as compared with last year, and a decrease of net revenue from $7,014,870 to $6,805,754.

A special count of mail matter at 20 leading post offices in the United States for the last week of June shows an increase of 19 per cent. in the number of pieces of all kinds compared with 1885.

In the Barbadoes the attention of the legislature is largely occupied with a bill in aid of the sugar planters, whose condition is deplorable on account of the current low prices for this staple. German bounties for production threaten sugar culture in the British colonies with extinction.

Distinctive features of the Yellowstone Park are in its hot springs and its geysers. For miles and miles the internal heat of the earth is breaking out in springs of steaming fluid. Clouds of steam are rising everywhere. There are more than 2000 of these hot springs, and there are 26 spouting geysers. These are sufficiently strange in their different shapes and the fantastic forms which the craters from which they issue have taken. The waters are of crystal clearness, as a rule, but their sediment has so lined the basins out of which they issue that they take on every tint, and are like fairy founts to the eye, if the fumes that issue from them do answer to the conception of the infernal regions. The formations from the deposits about the basins surpass everything else, both in form and color.

The Pullman Palace Car Company's shops at Elmira are to be returned to Philadelphia. They will employ 600 hands.

The jury in the suit of Gen. John G. Farnsworth, as receiver of the Bankers' and Merchants' Telegraph Company, in which $2,000,000 damages were claimed for the cutting of the wires of the plaintiff exactly one year before, on Saturday brought in a verdict in the Supreme Court, before Justice Lawrence, awarding $240,000 to the plaintiff. Joseph H. Choate, for the defendant, obtained 120 days after entry of judgment to make a case on appeal.

Unfavorable reports have reached Alexandria about both the quantity and the quality of the petroleum discovered in Upper Egypt, near the Red Sea.

M. de Lesseps, nothing daunted, says the machinery and apparatus are ready for the prosecution of the work on the Panama Canal until its completion in 1889, and that only $120,000,000 more are required. The directors accordingly will issue fresh bonds to the amount of 600,000,000 francs, with a large premium and frequent drawings.

The New York Cable Railroad Company claim that under the decisions of the courts they have a right to construct fully 68 miles of cable road, and will appear before the Court of Appeals in October.

Abandoned coal mines beneath Pittsburgh are being utilized as natural sewers, but the health authorities may object.

Under the favoring auspices of Minister Cox the relations of the United States and the Sultan are more cordial. Toasts to the prosperity of both governments were given at a banquet to the American Legation and officers and crew of the Kearsarge at the house of the Minister of Marine on the 7th inst.

A California orange grower this season shipped 5850 boxes of fine oranges from 12½ acres and 1250 trees. His net profit was $6700.

In parts of Dakota, July 6th, the temperature rose to the phenomenal hight of 105°, and in Minnesota the day was the hottest of which there is any record, the mercury ranging from 84 to 96°. Crops in many districts have suffered from the extreme heat, but fortunately winter wheat was generally fully secured.

A feeling of indignation is said to pervade all classes in China on account of the delay and hesitation on the part of the United States in the payment of indemnity for alleged outrages experienced by subjects of China on the Pacific Coast. A Canton correspondent says: "The action of the United States will largely determine what will be our share in the improvements that are to be made in China in the coming years. Railways are to be built, mines to be opened up and American manufacturers are to be left out in the cold in all these improvements of the Chinese. The American merchants in Hong Kong and Canton feel this, and are not slow in speaking their minds. Unless these American merchants are all wrong, the refusal of a comparatively small sum now will be a loss to our national wealth of many times the sum in the years to come. Should there be a downright refusal to pay this claim American influence will bid a long farewell to China. It will be in the policy of the Chinese Government working against American products that we shall suffer."

Corn oil is offered as a substitute for cotton-seed oil, and the latter threatens to supplant animal fat in the imitation butter manufacture.

The State Mine Inspector of Ohio in his annual report, just published, says the condition of the coal trade is by no means satisfactory and that the production of iron has been almost suspended. In regard to coal, the discovery of natural gas has had a depressing effect. There are 17,734 miners employed in the coal-producing counties, and the product last year amounted to 6,635,029 tons; upward of 35 per cent. comes from the Hocking Valley region.

The Canadian Pacific Railroad affords another notable example of what can be accomplished by engineering skill and industry, accompanied by a free use of capital. To join Montreal to Vancouver by rail it was necessary to cut through more than 300 miles of solid rock, to turn 14 streams from their natural beds, to build hundreds of iron bridges, one being over 1000 feet long and another some 286 feet high, and to keep an army of men, sometimes as high as 15,000, continually employed. To make the road return a fair rate of interest on the capital is now a primary object, and no effort will be spared

A Krupp steel shaft made at the great works in Germany broke on board the steamer Boaz, above Memphis, the other day, after being in use on the Mississippi River three years. It had made about 10,000,000 revolutions, the average being 3,250,000 per season of five months. The shaft was 32 feet 7 inches long and 13⅛ inches in diameter near the center, where it broke, and weighs 15,916 pounds. It makes 15 revolutions per minute by means

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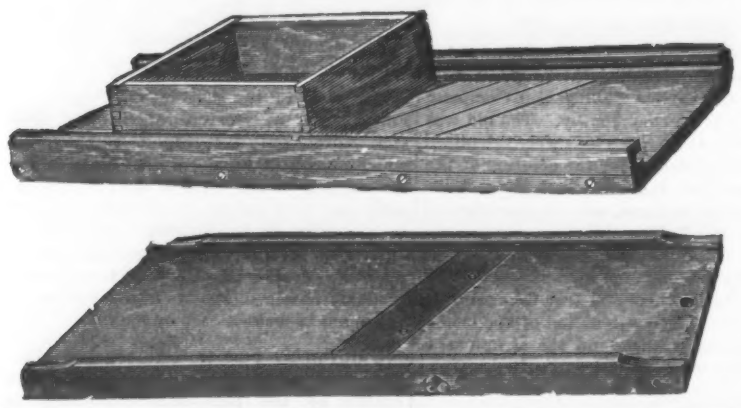
Manufacturers of Alarm Tills, Stove Trucks, Saw Bucks, Kraut, Slaw and Vegetable Cutters, Towel Racks and Rollers, Tinners' Mallets, Hats and Coat Racks, &c., &c.



WRITE FOR PRICES AND DISCOUNTS TO THE TRADE.

Daisy Trucks (2 Martin Casters and 2 Rigid Wheels).
Daisy Trucks (4 Martin Casters).

JOHN T. LEWIS & BROS.,
SUCCESSORS TO MORDECAI LEWIS,
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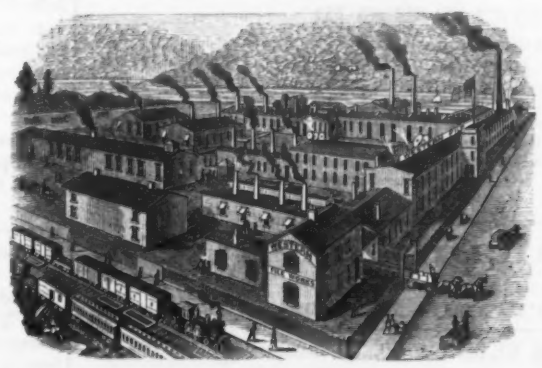

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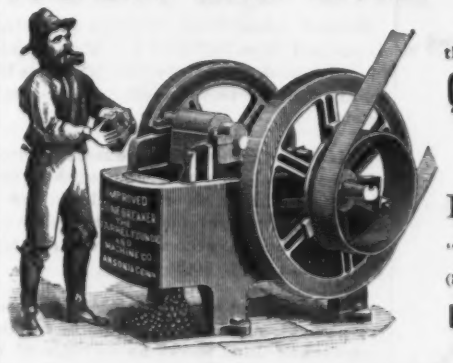

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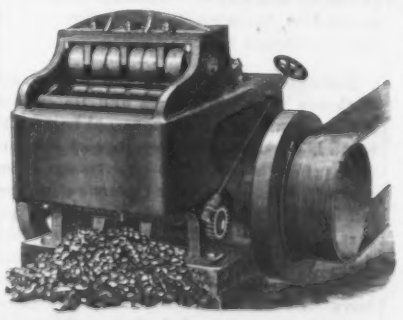

The stroke can be adjusted to suit any kind of rock and size of product while machine is in motion.

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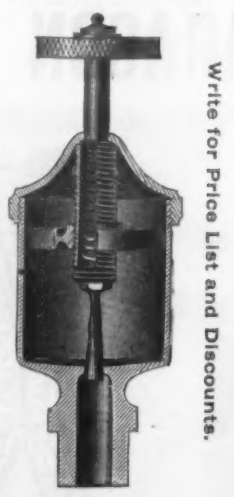

Inside Diameters of Cups, 1¼, 1⅛, 1¼, 2, 2⅛, 3, 3½, 4 Inches.

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of two engines with cylinders 26 inches in diameter and 8 feet stroke. The largest of the Krupp shafts in use on the Mississippi river is aboard the towboat Future City, and weighs a little above 11 tons. Several of these German steel shafts have broken, and many are of the opinion that they are not much safer than home-made wrought iron or steel. The one on the Boaz is to be repaired temporarily by banding.

M. J. Durham, First Comptroller of the Treasury, decides that under Section 3753 of the Revised Statutes eight hours constitute a day's work for laborers, workmen and mechanics who may be employed by or on behalf of the Government of the United States.

How the great St. Gothard Tunnel helps trade is the subject of a report by a French commission appointed to inquire into the economic consequences of piercing the mountain. The line was opened for traffic on the 1st of January, 1882. Since then Germany has increased the value of her exports to Italy from 66,000,000 to 110,000,000 francs, and to Spain (by Genoa) from 51,344,000 to 88,679,000 francs. As for Switzerland, in 1881 her exports to Italy were valued at 37,000,000 francs; they have now risen to over 75,000,000 francs. Italy has benefited even more. Her exports to Switzerland, Germany and Belgium have risen by leaps and bounds, and the commerce of the port of Genoa in particular has increased by 50 per cent. since the St. Gothard line was opened. What Italy has gained France has lost. Merchandise from the North wishing to reach the Mediterranean is more and more being sent to Genoa instead of Marseilles. What has to be done is to lessen the distance between Marseilles and the north.

At the burning of the box factory of the Tunis Mfg. Co., in Philadelphia, last week, the fire department was completely baffled by the failure of the fire-alarm box near the mill. A telephone wire was found which had been cut from the roof of a building, and had been thrown across the fire wire in such a way as to completely ground it or carry the current to the earth. The loss was $15,000.

The new electrical railway in Philadelphia, ½ mile in length, is claimed to be a success. A feature is the manner in which the current is taken up from the conductors in the conduit to the car. For this purpose frames have been constructed carrying safeguards for cleaning out the slot and protecting the other parts from obstacles on the road. These frames carry springs which rub against the iron portion of the conductors, thus forming a good electric contact. The springs are then connected to the terminals of the motor by insulated wires. The conductors are guarded from wear by channel irons, the latter at the same time preventing the springs from leaving the conductors.

Steam dredges are used in Illinois now for cutting large open ditches in swampy ground. The largest ditch in the State is that near the Illinois River, between Havana and Pekin, being 17½ miles long, 30 feet wide on top at the upper end and gradually increasing to 60 feet, and from 8 to 11 feet deep.

The recent purchases of German rails by the Chinese Government it now transpires were for two short roads, but other large roads are to be built in the Empire after the work of fortifying the coasts has been completed. There will then be sharp competition among English, German and French manufacturers to secure the contracts, and not improbably the American market will be affected.

The failure of De Rivera & Co., the sugar importers, of New York, has complicated two important industries in Rutland, Vt., of which De Rivera was the treasurer. The Esperanza Marble Company, of Rutland, and the Poultney Slate Works have been obliged to suspend. Mr. De Rivera was the principal stockholder in both companies.

The first city in Europe where electricity has been entirely substituted for gas for street lighting is the town of Hernösand, in Sweden. The motive-power is water, which is very plentiful there, rendering the light, it is said, cheaper than gas.

A new concrete now being used quite extensively in France is composed of eight parts sand, gravel and pebbles, one part powdered cinders and one and a half parts unslaked hydraulic lime. These materials are thoroughly beaten together, the mixture forming a concrete which sets almost immediately, and becomes in a few days extremely hard and solid. It may be improved by the addition of one part cement.

The new Italian cruiser Miseno, launched at Castellamare, is an iron steamer 120 feet ong by 21 wide. She will be fitted up with vertical cylinders and engines of 430 horse power, and is expected to have a speed of 10 miles an hour. She will be armed with two cannon of 12 cm. bore, and two revolver cannon. At the end of this month the deep-sea torpedo boat Tripoli will be launched, and at the end of August another, the Folgore.

Five shiploads of railroad iron arrived in Duluth last week, with 6500 tons of rails, and seven more cargoes are near. Steel rails enough to build 700 miles of railroad will be landed at the head of Lake Superior during the navigable season of 1886. Among the railroads receiving the rails are the St. Paul, Minneapolis and Manitoba road, 27,000 tons; Northern Pacific and its branches, 23,000 tons; Duluth and Manitoba, 13,000 tons; Minneapolis and Pacific road, 6000 tons; Duluth and Iron Range road, 4000 tons; Sault Ste. Marie and Minneapolis road (to Washburn), 8000 tons.

The valuation of taxable property in Jersey City is $56,704,102, of which $52,065,752 is real estate.

The finances and business of the bankrupt Texas and Pacific have reached so low a stage that it is proposed to cease operating the long Rio Grande Division, which extends from Fort Worth clear across the State to the junction of the road with the Southern Pacific at Sierra Bianca, a distance of 524 miles. There is not a single good-sized town in all this distance. The Texas and Pacific once aspired to span the entire distance from the Mississippi River to the Pacific Ocean.

President Purroy, of the Fire Department, exhibited at the headquarters of the department a portable electric hand lantern, for use in burning buildings in which the smoke is so dense that an ordinary light will not burn. It is the invention of a Paris electrician, and is similar to those used in the Fire Department of that city. It consists simply of a six-cell battery and a seven candle power incandescent lamp. The lantern is to be tested by the New York firemen.

Gustav Schwab, of the North German Lloyd Line, says German emigration to the United States has fallen off from various causes. The crops in the Kaiser's realms are very good and employ very many of those who would otherwise emigrate, and the labor disturbances in this city, the West and elsewhere have discouraged the average German and driven from him his ideas of what this land of freedom could do for him.

Rivers in the Eastern States are so much affected by drought that many mills have shut down, throwing an army of laborers out of work.

The British trade returns for the last three months are more encouraging. The export trade is especially satisfactory. Iron in all its branches shows signs of increased demand, particularly iron for shipbuilding.

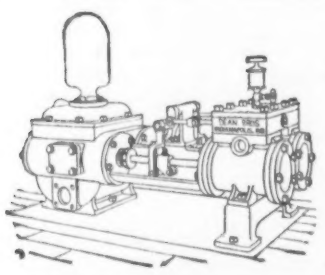
In Arizona irrigation is aiding the rapid development of the Territory and demonstrating its productiveness. Outside of a few small elevated valleys in the northern part of the Territory irrigation is everywhere essential to cultivation. The Arizona Canal is over 40 miles long, cost over $400,000, and irrigates nearly 100,000 acres of land. In the Salt River Valley there are 10 canals, and in the valley of the Gila a number of canals have been constructed. These enterprises are owned by incorporated companies, each share representing a quantity of water sufficient to irrigate 160 acres, and worth from $400 to $500.

The Electric Subway Commission have awarded a contract for the construction of conduits to the New York Electric Lines Company, Sidney F. Shelbourne, president. The right is reserved to modify the plans or construction of the system and the material used. Spaces shall be rented to any authorized company operating in any street or highway in the city who may apply for them. But no company can lease spaces they do not actually need, to the detriment of others who may desire to use them. No charge is to be made to the different city departments for their electrical conductors. The rent to be collected from all others using spaces shall not exceed the present cost of maintaining conductors to the companies occupying them. The company building the system may fix a fair scale of rents to be charged, according to the kind of conductors and the amount of space required, which rents shall be at the same rate to all occupants, and whenever the net annual rental from the subways, after paying charges and expenses, shall exceed 10 per cent. of the value of the capital invested the excess above said 10 per cent. shall be paid one-third to the city of New York, one-third to the companies occupying the subways and paying rent therefor, *pro rata*, and one-third to be retained by the construction company.

The New York Architectural Terra Cotta Works, at Ravenswood, owned by Congressman Potter and others, were nearly destroyed by fire on Saturday night, causing a loss estimated at near $100,000. By some the fire is attributed to the carelessness of plumbers.

The New York State Factory Inspectors have entered upon their duties by inspecting the 42 factories at Cohoes, where a number of children were found at work in disregard of the terms of the law, and their cases will be noted. The greater part of their work will be in New York and Brooklyn, where Mr. Franey, the assistant inspector, estimates the new law will put 30,000 children out of employment, and he thinks about the same number will be thrown out throughout the State.

Parts of eastern and southern Colorado are scourged with intense heat, and probably 100,000 cattle have been driven off to the ranges in the northwest.



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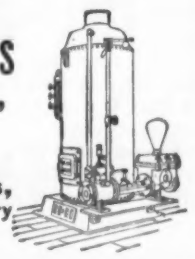

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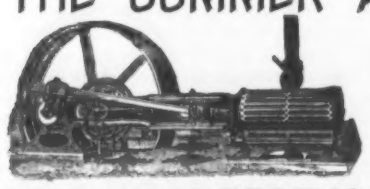

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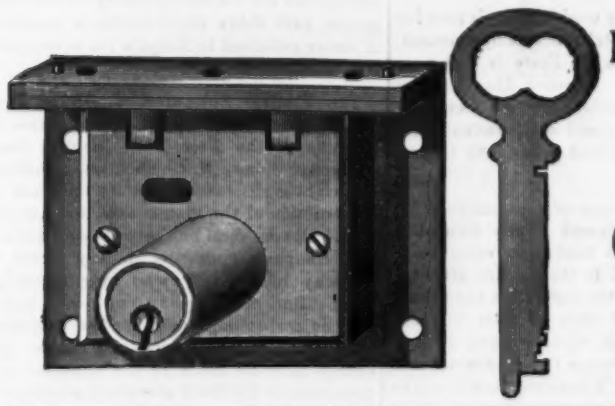

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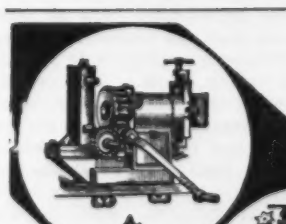

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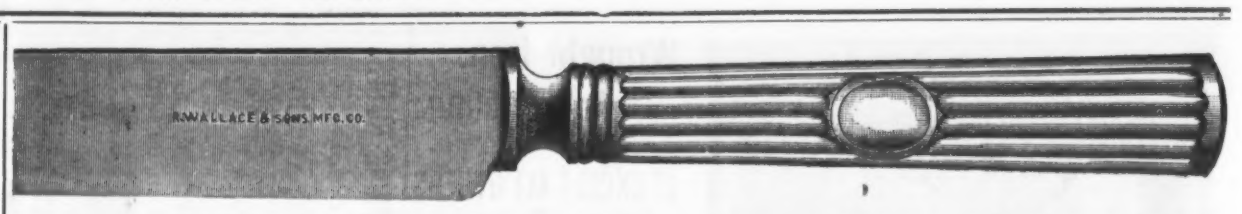

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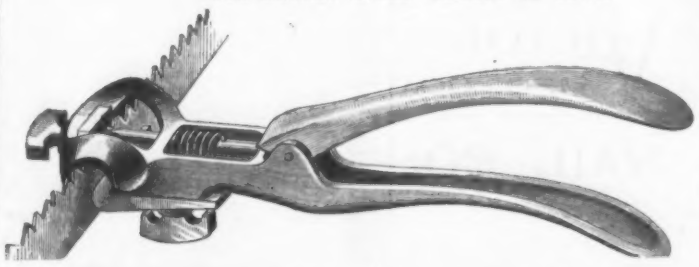

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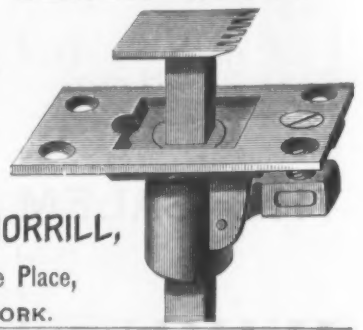

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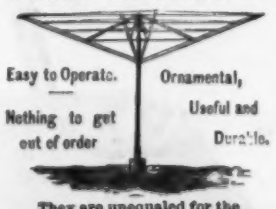

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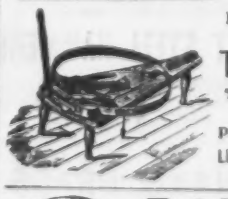

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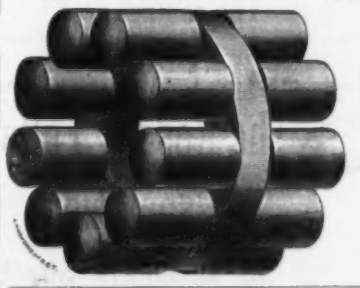

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PORT CHESTER BOLT & NUT CO.,

Port Chester, N. Y.,

MANUFACTURERS OF

BOLTS, NUTS, RIVETS and WASHERS,

CHAMFERED AND TRIMMED

SQUARE AND HEXAGON NUTS A SPECIALTY.

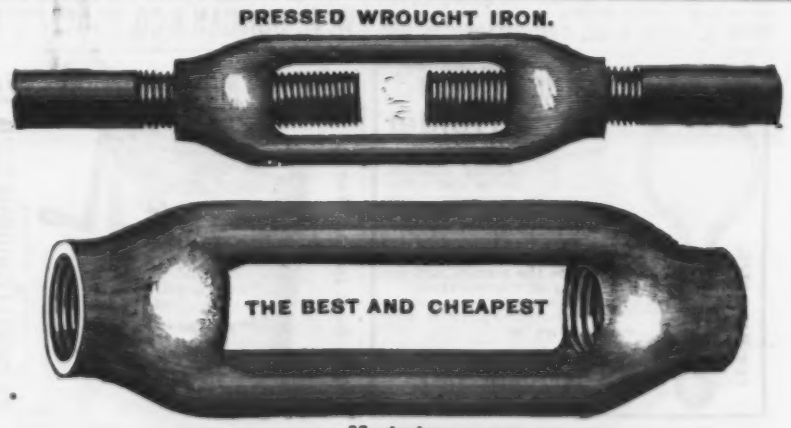
THE WALKLEY HARDWARE CO., Plantsville, Conn.,

MANUF CTURERS OF

TACKS, BRADS, &c.

We call the attention of the Trade to our "Diamond" and "Circle" brand **Steel Carpet Tacks.** "Diamond" brand, Uniform Weights; "Circle" brand, Double Uniform Weights: 6, 8, 10, 12, 14, 16 ounce "Diamond" brand, list, Blued, 37½c.; Tinned, 50c. "Circle" brand, list, Blued, 75c; Tinned, $1.00. Warranted equal to Swedes in all essentials

PRESSED WROUGHT IRON.



Made by

CLEVELAND CITY FORGE & IRON CO.,

Cleveland, Ohio.

DROP FORGED

MERRILL BROS., 26 First St. Brooklyn, E. D., N. Y.

THOS. FIRTH & SONS, Lim'd,

SHEFFIELD.

CRUCIBLE CAST STEEL.

JERE ABBOTT & CO.,

Agents and Importers of

SWEDISH IRON,

35 Oliver St., Boston. 23 Cliff St., New York.

GUSTAF LUNDBERG,

AGENT FOR

N. M. HÖGLUND'S SONS & CO.,

OF STOCKHOLM,

Swedish & Norway Iron

38 KILBY STREET. BOSTON.

PAGE, NEWELL & CO.,

139 Milk Street, Boston.

IRON, STEEL AND METAL MERCHANTS,

IMPORTERS OF

SWEDISH IRON,

Including Charcoal, Siemens-Martin and Bessemer Productions, Bars, Shapes, Rods, Billets, Blooms.

DELIVERIES MADE AT ALL PROMINENT AMERICAN, CANADIAN AND PROVINCIAL PORTS.

SWEDISH IRON. CHARLES G. LUNDELL, *No. 7 Exchange Place,* BOSTON, - - MASS.

SWEDISH IRON AND STEEL

(NORWAY) LEWANDER & CO.

Agents for L. G. BRATT & CO., of Gothenberg, Sweden.

Main Office: 12 Post Office Square, Boston, Mass.

THE F. F. ADAMS CO., ERIE, PA. *Send for Catalogue of* 1888.

No 2.

Duplex Swing.

The popularity of the Duplex Swing in the short time it has been introduced is phenomenal.

The Swing is constructed on original mechanical principles. The frame is so interlocked as to be prevented from sagging, even if the bolts are loose, a feature not possessed by any other swing manufactured. There are two sizes manufactured, adapted for both lawn and parlor. No. 1, or largest size has standards 9 feet 10 inches long, with a spread of about 9 feet, and 5 feet in width. The frame work is so constructed that by taking out two bolts the standards will close up, and by taking out the bolts of the two cross pieces the frame can be closely folded ready for shipping. The Swing can be put up or taken down ready for packing in 10 minutes.

The weight of the Swing is a little less than 100 pounds. It is very strong, having been tested by four men whose weight aggregated over 600 pounds.

The No. 2, or parlor size, has standards about 7 feet long, and otherwise proportioned in size, weighing less than 75 pounds. They combine simplicity of construction, beauty and strength, and can be operated with ease by small children in the swing

For Sale by all Leading Dealers.

LARGE HEADS. **CHAMPION** CITY HEADS.

Horse Nails

Manufactured from very best SWEDISH METAL. Will not SPLIT. Are accurately pointed, tough, strong and hold the shoes. Soft enough to clinch readily; stiff enough to drive without bending. All nails uniform and perfect. They are used in thousands of shops with the best of satisfaction, and are especially liked by "floor-men" for their good, reliable driving.

Made in two patterns, "LARGE HEADS" and "CITY HEADS."

QUALITY GUARANTEED.

LIST:

Nos.	4	5	6	7	8	9	10
	50c.	28c.	25c.	23c.	22c.	21c.	20c.

CHAMPION HORSE NAIL CO., Appleton, Wis.

GEORGE B. TURRELL, *Pres.* DUNCAN E. MAJOR, *Treas.*

Union Hardware Co., Torrington, Conn., U. S. A.,

MANUFACTURERS OF SPECIALTIES IN

Hardware & Leather.

Electroplaters in Gold, Silver, Nickel and Brass. Wood Turners in the following varieties of Wood:

Ebony,	Hickory,	Iron Wood,
Lancewood,	Appletree,	Laurel,
Cocobola,	Chestnut,	Cedar,
Rosewood,	Beech,	Cherry,
Mahogany,	Walnut,	Basswood,
Birch,	Lignumvitæ,	Poplar,
African Redwood,	Oak,	Butternut,
Turkey Boxwood,	Madeira,	Maple,
Live Oak,	Locust,	Pepperwood.

ESTIMATES FURNISHED ON APPLICATION.

New York office in charge of

Tower & Lyon, 95 Chambers St.

The F. WILSON PAT. GRINDING MILL

FOR

GRINDING WET, GREEN, GREASY OR DRY BONES,

For Poultry and Agricultural purposes, by Hand or Power. Circular with Price List on application.

WILSON BROS. Sole Manufacturers, EASTON, PA., U. S. A.

THE NEW EASY LAWN MOWER.

The leading mower in the market.

Front Cut. Steel. Open Roller Traction. Easy and Noiseless in Operation

The only mower that will cut *Wet Grass, Narrow Borders,* and close to walls and fences. Warranted in every particular.

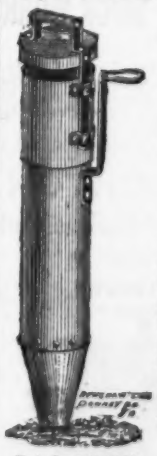
Manufactured by BLAIR MFG. CO., Springfield, Mass.

Medium Size "NEW EASY."

Browne's Exterminator

For exterminating all kinds of burrowing animals, such as

GOPHERS, PRAIRIE DOGS, GROUND SQUIRRELS, BADGERS, ETC., ETC.



This is an apparatus for burning straw and sulphur and forcing the smoke and gas down their holes, which kills them.

Over 2000 Sold in the Last 60 Days.

Being unable to supply the fast increasing demands, I am desirous of allowing responsible parties to manufacture on a royalty. They can be made in any tinshop, and cost about 50 cents. Will send a sample Exterminator to dealers for 75 cents. Weight about 5 lbs. Circular free. Write for particulars and secure territory. Address

Pat. June 8, 1886.

F. E. BROWNE,

LOS ANGELES, CAL.

Cheapest Patents Obtained in America

Special facilities, Finest Drawings, Indisputable Claims. NO PATENT NO PAY. Good Patents sold.

GLOBE PATENT OFFICE,

34 Park Row.

THE NEPTUNE FLEXIBLE JET and SPRAY HOSE NOZZLE.

All Rubber! Indestructible! Solid Stream instantly changed to spray by simply compressing the Soft Rubber Tip. The enlarged opening at the Tip produces spray, widely diffused or closely concentrated at will of user. The cheapest and best for Carriage Washing, Greenhouses, Gardens, Street Watering, &c. Sells at sight. Send for Circular. Enclose 25 cents for sample by mail to trade only.

The Hartford Rubber Works, Hartford Conn.

Rubber Goods for Mechanical purposes. Fine and accurate mould work to order.

BECKER'S Patent Washing Machine, Improved, approaches nearer the old method of hand rubbing than any device yet introduced to the public. Easily worked and washes perfectly clean. Descriptive circulars and price lists mailed free. N. C. BAUGHMAN, York, Pa.

Mention this paper.

MONCE'S

NOVELTY GLASS CUTTERS are the Standard.

DIAMONDIZED WHEEL

All Salable Styles made.

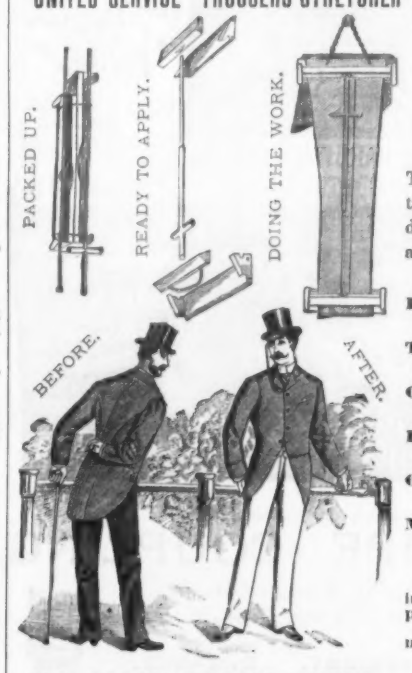
Remember that we are the Originator of the Glass Cutter Wheel—Patents not yet expired—INTERCHANGEABLE LOCK STENCILS.

S. G. Monce, Mfr., Bristol, Conn.

PATENTED IN EVERY NATION.

THE ENGLISH

"UNITED SERVICE" TROUSERS STRETCHER



NO MORE BAGGY KNEES.

WHOLESALE DEPOT,

J. C. McCARTY & CO.,

97 Chambers Street, New York.

Trade Lists and Circulars on application.

The patentees of the "United Service" Trousers Stretcher desire to call attention to their great advantages, and have every confidence in recommending them as a very useful and economical invention.

BY THEIR USE *OLD* TROUSERS APPEAR LIKE *NEW.*

THE GENTLE AND INCREASING TENSION DOES NO INJURY.

THERE IS NOTHING TO GET OUT OF ORDER.

THEY ARE PROPERLY AND QUICKLY ARRANGED.

THEY ARE ADAPTED FOR THICK OR THIN MATERIAL.

THEY ARE THE CHEAPEST AND MOST EFFICIENT.

CAUTION.—Legal proceedings will be taken against infringements, and venders of the same will be prosecuted

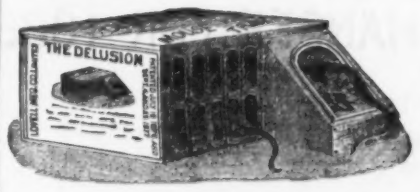
Each Stretcher is patent stamped, without which none are genuine.

GREEN, CADBURY & CO.,

Patentees and Manufacturers,

BIRMINGHAM, ENGLAND.

The Delusion Mouse Trap.



The Mouse goes in to get the bait,
And shuts the door by his own weight.
And then he jumps right through a hole,
And thinks he's out; but, bless his soul,
He's in a cage, some how or other,
And sets the trap to catch another.

Over Two Million of the Delusion Mouse Traps

have been sold since it was put upon the market, and the sales are increasing rapidly each year. No better evidence could be produced to show that it exactly meets the wants of the public.

LOVELL MFG. CO., LIMITED, Erie, Pa.,

MANUFACTURERS OF

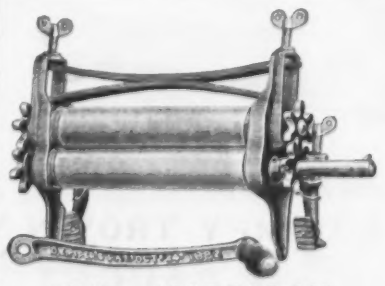
Clothes Wringers,

Delusion and Bonanza Mouse Traps,

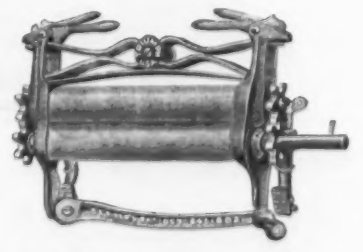
The Folding Wire Rat Trap,

Erie Rat Trap, &c.

Send for Catalogue.



THE AMERICAN.



THE TRIUMPH.

In addition to the above Wringers we make the most durable Friction Wringer on the market, called "The Leader," which we make with or without Pressure Screws on top. All these Wringers are made of Galvanized Iron. The Shafts are of Steel, and Black Enamelled Handles, impervious to Alkali or Water. Warranted the Easiest Turning Wringers made, and to Wring Dry.

C. H. GURNEY & CO., 247 & 249 Lake St. & 7 & 9 Market St. Chicago, Ill.

AGENTS FOR THE NORTHWEST.

THE TRIUMPH WRINGER CO., - - KEENE, N. H.

M. S. BROOKS,

Chester, Conn. Original Manufacturer of

BROOKS' BRIGHT IRON AND BRASS WIRE GOODS,

Also Bright Wire Goods for Cotton and Woolen Mills. Wire straightened, cut, milled and bent into any shape, with or without thread. Write for prices on anything made of wire.

(Established 1848.) **M. S. BROOKS, Chester, Conn.**

PHILADELPHIA.

Lloyd & Supplee Hardware Co.
Terms, 30 days. For 60 or 90 days, interest added at 8 per cent. per annum.

Anvils.
Peter Wright's, ⅌ ℔ .... 9¼¢
Trenton .... 9¼¢
Eagle Anvils, American, 10¢ .... dis. 20 %

Apple Parers.
Penn Apple Parers .... $5.00 net
White Mountain 5.00
Lots of 10 to 25 dozen, special prices.

Axes.
Hunt's Kentucky and Yankee, ⅌ doz. net $7.00
William Mann, ⅌ doz. net .... $6.50 @ 7.00
Favorite ⅌ doz. net 6.00
Beveled Axes .... add 50¢
Double Bit Axes. net .... $12.00 @ 13.00
Loveland Axes 7.00

Augers and Auger Bits.—New List January 7 1880.
Snell's Augers and Bits .... dis. 60@60&5 %
New Haven Copper Company .... dis. 60&10&5 %
Benjamin Pierce Auger Bits .... dis. 40 %
Jennings' Auger Bits, new list, Jan. 1, 1884..dis.. 25 %
Cook's Auger Bits and Augers .... dis 55 %
Snell's Ship Augers .... dis 15 @ 20 %
Watrous' Ship Augers .... dis. 15 @ 20 %
Bonney's Pat. Hol. Augers, list $48 ⅌ doz dis...40&10 %
Stearns' Pat. Hol. Augers, list $48 ⅌ doz...dis. 20&10 %

Balances.
Light and Common .... dis. 50 %

Bells.
Bevin Bros. Mfg. Co. Light Hand Bells dis. 75@75&10 %
Light Hand Bells .... dis 75&10@75&10&5 %
Swiss Pattern Hand Bells .... 60 %
Connell's Door Bells .... dis. 20&10 %
Gt. Western & Kentucky Cow, new list .... dis. 70 %

Boring Machines.
Upright, without Augers.....List, $5.50 } ......dis. 50 %
Angular, without Augers....List. 6.75 }

Bolts.—Eastern Carriage Bolts, new list, June 10, 1884 .... dis 75&10@75&10&5 %
Phila. Carriage Bolts new list..dis 75&10@75&10&5 %
Stanley, Wrought Shutter .... dis. 60&10 %

Braces.—Barber's Improved .... dis 50 %
Barber's Old Style .... 50&10 %
Backus, Polished .... dis 60&10@60&10&5 %
Backus, Nickeled .... dis. 60@60&10 %
Spofford .... dis 50&5@50&10 %
American Ball .... dis. 55&10 %
Amidon Improved .... dis. 60@60&10&5 %
Amidon Corner Brace .... dis. 40@40&10 %

Butts.
Cast Fast Joint, Narrow .... dis 60 %
Cast Fast Joint, Broad .... dis. 60&10 %
Cast Loose Joint, Narrow }
Cast Loose Joint, Broad }
Cast Acorn, Loose Pin } dis 70 @ 70&10 %
Cast Acorn, Japanned }
Cast Mayer's Loose Joint }
Wrought Loose Pin .... dis 65&5 %
Wrought Table Hinges and Back Flaps .... dis 65 %
Wrought Loose Joint .... dis. 65&5 %
Wrought Narrow Fast .... dis. 65 %

Blind Butts.
Parker .... dis. 75&2 %
Clark .... dis. 80 @ 80&5 %
Shepard .... dis. 75&10&5 @ 80 %
Lull & Porter .... dis. 80&10 %
Huffer's .... dis. 50 %

Casters.—Bed (new list July 1, 1880) Plate....dis 60 @ 60&5 %

Chains.—German Halter and Coil, list June, 1884 .... dis. 55 @ 55&5 %
Galvanized Pump .... ⅌ ℔ 5¼@6¢
Best Proof Coil Chain—English.

⅌ ℔	9¼	6¾	5¾	5¼	5	4¾
	3-16	¼	5-16	⅜	7-16	½

Chisels.—Socket Framing .... dis 75@75&5 %
Socket Firmer .... dis 75@75&5 %
Butcher's .... $5.00@5.25 to £ gold

Coffee Mills.—Box and Side (new list Jan. 1. 1880 .... dis 45&10 %
Enterprise .... dis 20&10@30 %

Cutlery.—Walden Pocket .... new list net
Pennsylvania Knife Co .... new list net
Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manufacturers' prices net.

Door Hangers.—Cronk Barn Door Hangers...No. 4, $12.00; No. 5, $14.00; No. 6, $18.,00.dis. 50&5@50&10 %
American Parlor Door Hanger ....$6.00; dis 20&10 %

Drawing Knives.
Hart Mfg. Co.'s .... dis. 75@75&5 %
Adjustable Handle .... dis 20@25 %

Files.
Nicholson .... dis 60 %
Disston .... dis 60&10 %
Butcher ....
Crown and Arrow .... 60&10&5 %

Fluting Machines.
Eagle—3½ in. roll .... each, $2.15 } dis 35 %
Eagle—5½ in. roll .... each, 2.85 }
Crown—4½ in. roll .... each, 3.50 }
Crown—6 in. roll .... each, 4.00 } dis 35 %
Crown—8 in. roll .... each. 6.50 }
Geneva Fluter .... dis 25 %
Favorite com. Fluter and Sad Iron..⅌ doz., $10.50 net

Fry Pans.
Burnished .... dis 70 %

⅌ doz....	$3.00	3.75	4.25	4.75	5.25	6.00	7.00	8.00	9.00
No..	0	1	2	3	4	5	6		8

Hammers.
Yerkes & Plumb's, new list .... dis 40&5 @ 40&10 %
Maydole Hammers, new list .... dis 25@25&10 %
Howell A. E. Nail Hammers .... ⅌ doz., net $3.75

Handles.
Disston Loop Handles Cross-Cut .... 33¢ pair net
Boynton Loop Handles Cross-Cut .... 20¢ pair net

Hatchets.
Yerkes & Plumb, new list .... dis 40&10 %
Hunt .... dis 40 @ 40&5 %

Hay and Straw Knives.
Lightning .... ⅌ doz., $18.00 dis. 20 %
Electric .... ⅌ doz., $9.50 @ 10.50
Wadsworth .... ⅌ doz., net dis 35&5@40 %
Walton Straw Knives .... ⅌ doz., net 17.00
Gem Hay Knife .... ⅌ doz $12.50@13.50

Hinges.
Strap and T .... dis 65&5 %

Horse Nails.

Nos.	5	6	7	8	9	10	
Globe	26	23	21	20	19	18	dis 10&5&5 %
Ausable	30	27	25	24	23	22	dis 25&10 %
" Pol'ed and P't'd & Blued & P't'd.	31	28	26	25	24	23	dis 25&10 %
Clinton		23	21	20	19	18	dis 25&10 %
" Pol'ed & P't'd.		24	22	21	20	19	dis 25&10 %
Saranac	26	23	21	20	19	18	dis 25@30 %

Locks and Knobs.
Branford Locks .... dis 45&2 %
Parker's Cabinet .... dis 40&2 %
American Padlocks .... dis 70&5 @ 70&10&5 %
Scandinavian Padlocks .... dis 50 %

⅌ doz..	$5.00	5.50	6.50	7.50	8.50	10.00	12.50	dis 60 %
No.....	57	58	59	60	61	62	63	
⅌ doz.	$18.00		26.00		33.00			dis 60 %
No.	64		65		66			

Lanterns.
Buckeye .... large list, net; small list, net
Tubular. No. 0, $6.75@7.00; No. 1, $8.25@8.50 ⅌ doz. net
Guards 40¢ extra.

Lawn Mowers.—Pennsylvania }
Philadelphia }
Excelsior } dis 50 %
Continental }
Quaker City }

Lawn and Garden Pumps.
Holland Patent .... list, $5.00, dis 10 %

Mattocks.
Long and Short Cutter .... new list, 60&10 %
Pennsylvania Pattern .... dis 60& 10 %

Molasses Gates.
Enterprise Mfg. Co.'s Measuring Faucets.dis. 20&10 %
Stebbins' Gates .... dis. 70&10 %
Lincoln's Gates .... dis. 66⅔&10 %
Landers, Frary & Clark's Petroleum .... dis 40&10 %
Brass Liquor Cocks new list Jan. 1, 1880..dis. 55&10 %
Cork Lined Cocks .... dis. 70 %

Meat Cutters.
Dixon's .... dis. 45@5 %
Woodruff .... dis. 45@5 %
Stowe .... dis. 45@5 %
Hale's .... dis. 70@70&5 %
American .... dis 35 %
Stuffers .... dis. 40 %
Enterprise Stuffers .... dis. 30%

Planes.—Sandusky Tool Co .... dis. 20&2 %
Ogontz .... dis. 25&2 %
Ohio and Auburn .... dis. 20&2 %
Bailey (S. R. & L. Co.) .... dis. 20&10 %

Plane Irons.—Ohio Tool Co .... dis. 20&10 %
Butcher's .... $5.00 @ 5.25 to £

Plumbs and Levels.
Stanley's Adjustable .... dis. 70&10 %
Stanley's Non-Adjustable .... dis. 70&10 %

Picks.—New list .... 60 %

Razor Strops.
Lamont Combination .... ⅌ doz. $4.00
Lamont Combination .... 1 gross lots $42.00
Imitation Emerson .... ⅌ doz.$2.00, 70&10&10 %

Rules.—Stanley Boxwood .... dis. 80&5@80&10 %
Stanley Ivory .... dis. 55 @55&10%

Steelyards.—Hart's Pattern .... dis40&10@50&5 %

Per doz......	$14.50	17.75	21.00	26.50	31.00	35.50
Lbs.	50	100	150	200	250	300.

American Pattern .... dis. 40&10@50 %

Per doz......	$8.00	10.25	13.75	15.60	16.75	19.50
Lbs.	50	100	150	200	250	300

Scale Beams .... 60&5@60&10%
Custers .... 25 %

Squares.
Steel and Iron.dis. 60&10 %; full cases dis. .... 70&10@70&10&5 %
Try Squares, Stanley .... dis 60&10 %
Disston's Try Squares .... dis 45&10 %

Scythes.—Golden Clipper, Damascus Blade, Boxed and Sharpened .... ⅌ doz $7.00 net
Clipper No. 10, Bronzed Blade, Boxed and Sharpened .... ⅌ doz $6.70 net

Saws.—Disston's Hand, Panel and Rip....dis 20&10 %
Disston's Circular .... dis 45&10 %
Cross-Cut No. 2, Plain Tooth .... dis 45&10 %
Cross-Cut Patent Tooth .... dis 45&10 %
Cross-Cut Champion Tooth .... dis 45&10 %

Shovels and Spades.
Oliver Ames & Sons, new list .... dis 20 %
Griffiths .... dis 50&10@60 %
Rowland .... dis 60@60&5 %

Sad Irons.—4 to 10 ℔ .... ⅌ ℔ 2.35@2.50¢
Mrs. Potts' Patent .... dis 35@40 %

Stone.
Washita Extra .... ⅌ ℔ 30¢
Washita No. 1 .... ⅌ ℔ 25¢
Washita No. 2 .... ⅌ ℔ 20¢
Washita Slips .... ⅌ ℔ 50¢
Washita Axe .... ⅌ ℔ 15¢
Hindostan Oil Stone No. 1 .... ⅌ ℔ 4½ %
Hindostan Axe Stone .... ⅌ ℔ 5¢
Hindostan Slips .... ⅌ ℔ 8¢

Screws.—Parker list (new list).
Flat Head Iron .... dis 75&10 %
Flat Head Brass .... dis 75 %
Round Head Brass .... dis 70 %
Round Head Iron .... dis 70&10 %

Spoons.
Plated .... dis 50&10@60 %
German Silver .... dis 50 @ 50&5 %
Britannia, Boardman's .... dis 60 %
Britannia, Parker's .... dis 60&10 %
Tinned .... dis 10 %

Springs.—Torrey .... dis 50 %
Gem No. 3 small Japanned .... $2.00 } dis 50&10 %
Gem No. 2 medium Japanned .... 2.75 }
Coil No. 10 ⅌ gross net .... $5.50@6.00
Other Standard Springs .... dis 50&10@60 %
Warner Door Springs, ⅌ doz. $2.50..dis 40&10 @ 50 %
Standard Spring Hinges—
Single No. 0, ⅌ doz. net .... $1.10@1.25
Single No. 1, ⅌ doz. net .... 1.25@1.50
Other Standard Spring Hinges .... dis 25&10@40 %

Stocks and Dies .... dis 30 @ 30&10 %

Stove Polish.—Gem .... ⅌ gross, $4.50, dis 10 %
Dixon .... 6.00, dis 10 %
Fire Fly .... $3.00 gross, net

Tacks .... Combination discounts
Shoe Nails—4-8, and over, 5½¢ } 10 %
Shoe Nails—3½-8, and under 7¢ }
Double Pointed Tacks .... dis 80 %

Traps.
Genuine Oneida—Newhouse .... dis 35 %
Im. Oneida—Newhouse list. First qual.dis 60&10&10 %

Vises.—Solid Box. Trenton new list..dis 50&10@60 %

Wrenches.—Agricultural .... dis 80@80&5 %
Coes' Genuine .... dis 60&3 %
Coes' Mechanics' .... dis 60&10&3 %
Coes' Mechanics,' Mall. Bar .... dis 80 @ 80&5 %

Wire.
Bright or Annealed, No. 0 to 18 .... dis 65&5 %
Bright or Annealed, No. 19 to 26 .... dis 70 %
Bright or Annealed, No. 27 to 36 .... dis 70 %
Coppered, 0 to 18 .... dis 65 %
Tinned Broom Wire .... dis 65 %
Galvanized Barb Wire .... 5¢
Painted Barb Wire .... 4½¢
Galvanized, Nos. 7 to 18...Market List, dis .... 60 %

Wringers.
Peerless No. 2½ .... $27.00 }
Peerless No. 2 .... 31.50 }
Universal No. 2½ .... 27.00 }
Universal No. 2 .... 31.50 } dis net @ 5 %
Novelty No. 2, for common tubs .... 27.00 }
Novelty No. 3, " " .... 31.50 }
Excelsior E, for stationary tubs .... 36.00 }
Excelsior F " " .... 43.50 }

PITTSBURGH.

Merchant Iron.

TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2 ⅌ cent. for cash if remitted within 10 days from date of invoice.

For fluctuations and discounts on card rates see weekly Pittsburgh Trade Report.

The following are card rates.

Flat Bar.

1¼ to 4 by ⅜ to 1 ....2.0¢	1¼ and 1⅛ by ⅜ to ¾. 2.1¢
4¼ to 6 by ⅜ to 1 ....2.1¢	1 and 1⅛ by ¼ to ¾....2.2¢
1⅛ to 6 by 1⅛ to 1⅛....2.4¢	⅝, ¾ and ⅞ by ⅜ to ⅝.2.4¢

Rounds and Squares.

1 to 1⅝ ....2.0¢	4⅛ to 5......3.5¢	⅜........2.6¢
2 to 2⅜....2.2¢	⅝ to ⅞ ....2.1¢	5-16........2.8¢
2⅜ to 3¼....2.5¢	⅝ to 9-16....2.2¢	¼........3.0¢
3⅜ to 4 ....3.0¢	⅜ to 7-16....2.4¢	3-16........5.0¢

Oval Iron.

⅝ to 1⅛........2.4¢	½........2.8¢
⅝ to ¾........2.6¢	⅜........3.2¢

Half Oval and Half Round.

⅝ to 1⅛ inch........2.7¢	½ inch........3.5¢
⅝ to ¾ " ....3.2¢	⅜ " ....5.0¢

Horse Shoe.

⅝ to 1⅛ by 5-16 to ¾ inch .... 3.0¢

Wagon Box Iron.

⅞ inch, Nos. 13 & 14...3.2¢	¾ inch, Nos. 11 & 12...3.3¢
⅞ " " 11 & 12...3.0¢	⅝ " " 13 & 14...3.9¢
¾ " " 13 & 14...3.5¢	⅝ " " 11 & 12...3.6¢

Heavy Bands.

3½ to 6 by ¼ & 5-16..2.2¢	¾ to ⅞ by ¼ & 5-16..2.5¢
1⅛ to 3¼ by ¼ & 5-16..2.2¢	⅝ & ½ by ¼ & 5 16....3.0¢
1 to 1⅛ by ¼ & 5-16..2.3¢	

Light Bands.

1¼ to 6 by ⅛ to 3-16....2.5¢	¾ & 11-16 by ⅛ to 3-16.3.2¢
1⅛ to 6 by Nos. 11 & 12.2.6¢	¾ & 11-16 by Nos. 11,12.3.3¢
1 to 1⅛ by ⅛ to 3-16....2.6¢	⅝ & 9-16 by ⅛ to 3-16..3.5¢
1 to 1⅛ by Nos. 11 & 12.2.7¢	⅝ & 9-16 by Nos. 11,12.3.6¢
⅞ & 13-16 by ⅛ to 3-16.2.9¢	½ inch by ⅛ & 3-16....3.8¢
⅞ & 13-16 by Nos. 11,12.3.0¢	½ in. by Nos. 11 & 12..3.9¢

Hoop Iron.

1¼ to 4, Nos. 13, 14, 15.2.8¢	¾, Nos. 19 and 20......3.7¢
1¼ to 2, Nos. 16, 17, 18.2.9¢	¾, No. 21........3.8¢
1¼ to 2, No. 19........3.0¢	¾, No. 22........3.9¢
1¼ to 2, No. 20........3.1¢	11-16, Nos. 13, 14 & 15.3.7¢
1¼ to 2, No. 21........3.2¢	11-16, Nos. 16, 17 & 18.3.8¢
1¼ to 2, No. 22........3.3¢	11-16, Nos. 19 and 20..3.9¢
15-16, 1 & 1⅛, Nos. 13, 14 & 15........3.0¢	11-16, No. 21........4.0¢
15-16, 1 & 1⅛, Nos. 16, 17 & 18........3.1¢	11-16, No. 22........4.1¢
15-16, 1 & 1⅛, Nos. 19 & 20........3.2¢	⅝, Nos. 13, 14 and 15..3.9¢
15-16, 1 & 1⅛, No. 21...3.3¢	⅝, Nos. 16, 17 and 18..4.0¢
15-16, 1 & 1⅛, No. 22...3.4¢	⅝, Nos. 19 and 20......4.1¢
⅞, Nos. 13, 14 and 15..3.2¢	⅝, No. 21........4.2¢
⅞, Nos. 16, 17 and 18..3.3¢	⅝, No. 22........4.3¢
⅞, Nos. 19 and 20......3.4¢	⅝, No. 23........4.4¢
⅞, No. 21........3.5¢	9-16, Nos. 13, 14 & 15..4.1¢
⅞, No. 22........3.6¢	9-16, Nos. 16, 17 & 18..4.2¢
13-16, Nos. 13, 14 & 15..3.4¢	9-16, Nos. 19 and 20....4.3¢
13-16, Nos. 16, 17 & 18..3.5¢	9-16, No. 21........4.4¢
13-16, Nos. 19 and 20...3.6¢	9-16, No. 22........4.5¢
13-16, No. 21........3.7¢	9-16, No. 23........4.6¢
13-16, No. 22........3.8¢	½ inch, Nos. 13, 14, 15.4.3¢
¾, Nos. 13, 14 and 15..3.5¢	½ inch, Nos. 16, 17, 18.4.4¢
¾, Nos. 16, 17 and 18..3.6¢	½ inch, Nos. 19 & 20...4.6¢
	½ inch, No. 21........4.7¢
	½ inch, No. 22........4.8¢
	½ inch, No. 23........4.9¢

The prices under Hoop do not apply to Cotton Ties. 1-10¢ ⅌ ℔ extra will be charged for each gauge lighter than the lightest indicated.

1-10¢ ⅌ ℔ extra will be charged for cutting Hoops to specified lengths.

Barrel Hoops.

1¼ to 2 in., cut to length.
9 to 11 ℔, ⅌ set of 6 hoops .... 3.0¢
8 ℔ and less than 9 ℔, ⅌ set of 6 hoops .... 3.1¢
Less than — ℔, ⅌ set of 6 hoops .... 3.2¢
Extras for cutting to length all preceding Iron, including Tire 1.10

Tank Iron.

No. 9 & heavier, 2.8¢; Plow Slabs, 3.0¢ Plow Wings, 3.3¢

Sheet Iron.

	Common.	Charcoal.	Juniata.
Nos. 10 to 14	3.0¢	4.5¢	6.0¢
Nos. 15 to 17	3.3¢	4.8¢	6.3¢
Nos. 18 to 21	3.6¢	5.1¢	6.6¢
Nos. 22 to 24	3.8¢	5.3¢	6.8¢
Nos. 25 and 26	4.0¢	5.5¢	7.0¢
No. 27	4.2¢	5.7¢	7.2¢
No. 28	4.6¢	6.1¢	7.6¢

All sheets No. 18 and lighter, over 30 inches wide, not less than 2.10¢ extra.

Wood's Patent Planished Sheet.

1st quality (A) .... 10¢ | 2d quality (B) .... 9¢

American Galvanized Sheets.

(Sono C. H. B.) Brand. Patent Leveled:

Nos. 14 to 20........12¢	No. 27........15¢
Nos. 21 to 24........13¢	No. 28........16¢
Nos. 25 and 26........14¢	No. 29........18¢

57½ @ 60 % discount.

Coal Screen Iron.

1¼ by ⅝ by 5-16. ....2.5¢ | 1 by ⅝ by 5-16 .... 3.0¢

Angle Iron.

2½, 3, 3½ and 4 inch ..2.8¢	1⅛ by 1, for Pl. Hand..3.3¢
1⅝, 1¾, 2 and 2¼ " ...2.8¢	1¼ by ¾ " " ..3.3¢
1¼ inch........2.9¢	1⅛ by ¾ " " ..3.4¢
1 " ....3.1¢	

T Rail.

8 ℔ to the yard....2.4¢	20 ℔ to the yard......2.3¢
12 " " ....2.3¢	28 " " ....2.3¢
16 " " ....2.3¢	30 " " ....2.3¢

Splice Joints for 12, 16 and 20 ℔ Rail, 30¢ each; 28 and 30 ℔ Rail, 40¢ each: 40 ℔. 50¢ each.
3½ by ⅝ and ½ Spikes for 20 and 28 ℔ Rail .... 3¼¢
2½ and 3 by ⅝ " " 12 and 16 ℔ " .... 3.5¢
2½ by 5-16 " " 8 ℔ Rail .... 4.0¢

Flat Rails.—Punched and Countersunk.

1¼ to 2 by ⅛ to ⅝ inch .... 2.5¢
1¼ by ¾ and 7-16 inch .... 2.7¢
1¼ by ⅝, 7-16 and ½ inch .... 3.0¢

Juniata Nail Rods, 6.0¢; Norway Nail Rods, 7.5¢.
Guard Iron, ½x¾x⅝ and ⅝x⅝x⅝ .... 3.5¢
Guard Iron ⅝x⅝x9-16 and ¾x⅝x⅛ .... 3.7¢

Drag Bars........2.8¢	Cyl. & Landside Iron..2.7¢
Dropper Bars........3.3¢	Plow Beam Iron........2.5¢

Nails.

See Pittsburgh Trade Report.

Tool Steel.

Classification Adopted April 13, 1886, Steel Association of United States.

ROUND, SQUARE AND OCTAGON.

⅝ to 2...base, 8.0¢	6⅛ to 7........3.0¢	¼ & 9-32. 3.0¢
2⅛ to 3...ext. 1.0¢	7⅛ to 8........3.5¢	3-16........5.0¢
3⅛ to 4........1.5¢	9-16 to ½. ....0.5¢	5-32........10.0¢
4⅛ to 5........2.0¢	7-16 to ⅜ .....1.0¢	⅛ ....18.0¢
5⅛ to 6........2.5¢	5-16 and 11-32 2.0¢	

FLATS.

2 to 9-16 inches wide x 2 to ⅝ inches thick...base, 8.0¢

List of Extras.

8 x 7........ 3.5¢	6 x ½........ 1.0¢	⅝ x 7-16.... 1.0¢
8 x 6........ 2.5¢	6 x ¼........ 1.0¢	⅝ x ⅜........ 1.0¢
8 x 5........ 2.5¢	6 x ⅛........ 2.0¢	⅝ x 5-16.... 1.5¢
8 x 4........ 2.0¢	5 x 4........ 1.5¢	⅝ x ¼........ 1.5¢
8 x 3........ 1.5¢	5 x 3........ 1.0¢	⅝ x 3-16.... 2.0¢
8 x 2........ 1.5¢	5 x 2 to ⅝.. 1.0¢	⅝ x ⅛........ 2.0¢
8 x 1¾ to ⅝ 1.0¢	5 x ½........ 1.0¢	½ x 7-16... 1.0¢
8 x ½........ 1.0¢	5 x ¼........ 1.0¢	½ x ⅜........ 1.0¢
8 x ¼........ 2.0¢	5 x ⅛........ 2.0¢	½ x 5-16.... 1.5¢
8 x ⅛........ 3.0¢	4 x 3........ 1.0¢	½ x ¼........ 1.5¢
7 x 6........ 2.5¢	4 x 2 to ⅝.. 1.0¢	½ x 3-16.... 2.0¢
7 x 5........ 2.0¢	4 x ½........ 1.0¢	½ x ⅛........ 3.0¢
7 x 4........ 2.0¢	4 x ¼........ 1.0¢	⅜ x 5-16.... 1.5¢
7 x 3........ 1.5¢	4 x ⅛........ 2.0¢	⅜ x ¼........ 2.0¢
7 x 2 to ⅝.. 1.0¢	3 x 3 to ⅝.. 1.0¢	⅜ x 3-16.... 3.0¢
7 x ½........ 1.0¢	3 x ½........ 1.0¢	⅜ x ⅛........ 4.0¢
7 x ¼........ 1.0¢	3 x ¼........ 1.0¢	5-16 x ¼.... 2.0¢
7 x ⅛........ 2.0¢	3 x ⅛........ 2.0¢	5-16 x 3-16... 4.0¢
6 x 5........ 2.0¢	2 to ⅝ x ½. 1.0¢	5-16 x ⅛.... 8.0¢
6 x 4........ 1.5¢	2 to ⅝ x ¼. 1.5¢	¼ x 3-16.... 5.0¢
6 x 3........ 1.5¢	2 to ⅝ x ⅛. 2.0¢	¼ x ⅛........ 15.0¢
6 x 2 to ⅝.. 1.0¢	⅝ x ½ .... 1.0¢	3-16 x ⅛.... 20.0¢

All unenumerated sizes will be charged at price of next larger dimension in list. Cutting to multiples or specified lengths, ⅛¢ ⅌ ℔ for over 24-inch; under, according to contract.

Crucible Steels.

CRUCIBLE MACHINERY, ROUNDS AND SQUARES.

¾ to 3 inches....base, 4.0¢	⅜ to 7-16 in.....extra, 0.5¢
3⅛ to 4 in......extra, 0.5¢	5-16 and 11-32 in..ex., 1.0¢
4⅛ to 5 in......extra, 1.0¢	¼ and 9-32......extra, 1.5¢
5⅛ to 6 in.... extra, 1.5¢	3-16 inch ......extra, 3 0¢
⅝ to 11-16 in...extra, 0.2¢	

Octagons, ⅛¢ extra throughout the list. Flats, one-half the extras of the Flat Tool Steel classification. Cutting to multiples or specified lengths, 1½¢ per pound for anything over 24 inches long. For lengths 24 inches or less, according to to special contract.

CRUCIBLE SPRING STEEL, FLAT.

1¼ to 4 in. x No 4 gauge to ⅛ in. inc .... base, 4.0¢
1 and 1⅛ in x No. 1 gauge to 4 gauge inc...extra, 0.2¢
1 to 3 in. x No. 5 gauge to 7 gauge inc .... extra, 0.5¢
⅞ to 3 in x No. 8 gauge to 10 gauge inc .... extra, 1.0¢
¾ to 3 in. x No. 11 gauge to 16 gauge inc....extra, 2.0¢
¾ to 3 in. x No. 17 gauge to 20 gauge inc....extra. 3.5¢
⅜ to ⅝ in. x No. 10 gauge to 16 gauge inc...extra, 4.0¢
⅜ to ⅝ in. x No. 17 gauge to 20 gauge inc...extra, 5.0¢
⅜ to ⅝ in. x No. 21 gauge to 24 gauge inc...extra, 6.0¢
Cut to length. 24 inches and over, ⅛¢ per pound extra and under, according to special contract.

ROUND AND SQUARE CRUCIBLE SPRING STEEL.

⅝ to 1⅛ inches..base, 4.0¢	5-16 in........extra, 1.0¢
½ to 9-16 in.....extra, 0.2¢	¼ in........extra, 1.5¢
⅜ to 7-16 in.....extra, 0.5¢	

CRUCIBLE SHEET STEEL, ALL GRADES.

To 21 gauge (for best quality), base, 9.0¢; 22 gauge, extra, 1.0¢; and 1¢ advance of extra for every No. of gauge to No. 26.

CRUCIBLE CIRCULARS.

Diameter.	Diameter.
To 46 inch........base, 11¢	56 to 60 inch..extra, 5¢
48 inch........extra, 1¢	62 to 64 inch..extra, 7¢
50 inch........extra. 2¢	66 to 70 inch..extra, 9¢
52 to 54 inch..extra, 3¢	72 inch........extra, 11¢

Bessemer and Open-Hearth Steels.

MACHINERY ROUNDS AND SQUARES.

⅝ to 3 in. inc.....base, 2.8¢	½ to 11-16 inch inc....0.2¢
Extra.	⅜ to 7-16 inch inc.....0.3¢
3⅛ to 4 inches inc......0.3¢	5 16 and 11-32 in. inc..0.5¢
4⅛ to 5 inches inc......0.5¢	¼ and 9-32 inch inc....0.7¢
5⅛ to 6 inches inc......1.0¢	

Machine cutting to specified lengths above 24 in..0.2¢
Machine cutting to specified lengths, 12 to 24 in...0.4¢
Machine cutting to specified lengths, less than 12 in., according to contract, but not less than 0.6¢ extra on each size. Shearing or sawing, one-half of the above extras for cutting.

MACHINERY FLATS.

1¼ in. and wider x ⅜ to 1 in. thick .... base, 2 8¢
1¼ in. and wider x ¼ to 5-16 in. thick .... extra, 0.1¢
1¼ in. and wider x 3-16 and 7-32 in. thick...extra, 0.2¢
1¼ in. and wider x ⅛ and 5-32 in thick.....extra, 0.3¢
¾ in. to 1⅛ in. x ¼ to 1 in. thick .... extra, 0.2¢
¾ in. to 1⅛ in. x 3-16 and 7-32 in. thick.....extra, 0.3¢
¾ in. to 1⅛ in. x ⅛ and 5-32 in. thick.......extra, 0.5¢
⅜ in. to ⅝ in. x ¼ to ½ in. thick .... extra, 0.3¢
⅜ in. to ⅝ in. x 3-16 and 7.32 in. thick......extra, 0.5¢
⅜ in. to ⅝ in. x ⅛ and 5-32 in. thick .... extra, 0.7¢
⅜ in. to 1⅛ in. x 1-16 and 3-32 in. thick.....extra, 2.0¢
1¼ in. to 3 in. x 1-16 and 3-32 in. thick.......extra, 1.0¢

TIRE STEEL, ROUND EDGES.

¼ inch and wider x ⅜ to 1 inch thick .... base, 2.6¢
Extras same as Flat Machinery extras.

TIRE STEEL, SQUARE EDGES.

Throughout the list 0.2¢ more than for same sizes of Round Edge Tire.

TOE-CALK STEEL.

1¼ inches and wider x ⅜ to 1 inch thick .....base, 2.7¢
Extras same as Machinery Extras

SLEIGH-SHOE STEEL.

1¼ inches and wider x ⅜ to 1 inch thick.....base, 2.8¢
Extras same as Machinery Extras.

SPRING STEEL FLAT.

1¼ to 4 in. x No. 4 gauge to ⅛ in. inc. .... base, 2.9¢
1 and 1⅛ in. x No. 1 gauge to 4 gauge inc...extra, 0.2¢
1 to 3 in. x No. 5 gauge to 7 gauge inc .... extra, 0.5¢
⅞ to 3 in. x No. 8 gauge to 10 gauge inc.....extra, 1.0¢
¾ to 3 in. x No. 11 gauge to 16 gauge inc....extra, 2.0¢
¾ to 3 in. x No. 17 gauge to 20 gauge inc....extra, 3.5¢
⅜ to ⅝ in. x No. 10 gauge to 16 gauge inc...extra, 4.0¢
⅜ to ⅝ in. x No. 17 gauge to 20 gauge inc.. extra. 5.0¢
⅜ to ⅝ in. x No. 21 gauge to 24 gauge inc...extra, 6.0¢
Bessemer and Open-Hearth cut to length, 24 inches and over, 0.1¢ per pound extra; and under, by special contract.

ROUND SPRING STEEL.

⅝ to 1⅛ inches..base, 2.9¢	5-16 inch........extra, 1.0¢
½ to 9-16 in.....extra, 0.2¢	¼ inch........extra, 1.5¢
⅜ to 7-16 in.....extra, 0.5¢	

CUTLERY STEEL.

14 gauge thick and heavier .... base, 3¢
15, 16 and 17 gauge .... extra, 1¢
18 and 19 gauge .... extra, 2¢
Rounds, ⅝ diameter and heavier .... base, —¢
Rounds, smaller sizes, extras same as Machinery.
Double bevel, 14 gauge and heavier .... —¢
Double bevel, thinner than 14 gauge .... extra, 1¢
Fork Steel, Open-Hearth or Bessemer .... 3¢
Rake Steel, Open-Hearth or Bessemer .... 4¢
Hoe Steel, Open-Hearth or Bessemer .... 3¢
Auger Bit Steel, Open-Hearth or Bessemer .... 3¢
Plow Slabs, Open-Hearth or Bessemer .... 3¢
Ovals and Half Ovals, Half Rounds and Special Shapes subject to special agreement.
No freight allowance shall be made on less than 500 pounds of Steel in one shipment.

MISCELLANEOUS.

Axle Billets........2 ¢	Thrasher Steel........2½¢
Scythe Back Steel....3 ¢	Thrasher Teeth........3½¢
Grain Drill Bars........2½¢	Rolled Ham'r Billets .2½¢
Grain Drill Points.....3½¢	

Cutter Shoe, cut to lengths and tapered .... 3¢
Rolling Coulter Blanks, cut and punched .... 6¢
Terms.—Four months: 3 per cent. discount for cash if remitted within 30 days.

Plate Steel.

Shell Steel, ¼ inch thick and heavier, 50,000 to 60,000 pounds tensile strength .... base, 3.25¢
Shell Steel, 3-16 inch thick, 50,000 to 60,000 pounds tensile strength .... extra, 0 3¢
Shell Steel, 8 gauge and 9 gauge thick, 50,000 to 60,000 pounds tensile strength .... extra, 0.5¢
Shell Steel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strength .... extra, 0.7¢
Shell Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Shell Steel Plates, 100 inches to 105 inches wide, extra on each thickness, ½¢
Shell Steel Heads, 95 inches diameter to 105 inches diameter .... extra on each thickness, ½¢
Shell Steel Heads, 105 inches diameter to 108 inches diameter .... extra on each thickness, 1.0¢
Flange Steel, ¼ inch thick and heavier, 50,000 to 60,000 pounds tensile strength .... extra, 0.5¢
Flange Steel, 3-16 inch thick, 50,000 to 60,000 pounds tensile strength .... extra, 0.8¢
Flange Steel, 8 gauge and 9 gauge thick, 50,000 to 60,000 pounds tensile strength .... extra, 1¢
Flange Steel, 10 gauge to 12 gauge thick, 50,000 to 60,000 pounds tensile strength .... extra. 1.2¢
Flange Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Flange Steel Plates, 100 inches to 105 inches wide, extra on each thickness, ½¢
Flange Steel Heads, 95 inches diameter to 105 inches diameter .... extra on each thickness, ½¢
Flange Steel Heads, 105 inches diameter to 108 inches diameter .... extra on each thickness, 1¢
Best Boiler Steel, ¼ inch thick and heavier, 50,000 to 70,000 pounds tensile strength .... extra, 1¢
Best Boiler Steel, 3-16 inch thick, 50,000 to 70,000 pounds tensile strength .... extra. 1.3¢
Best Boiler Steel, 8 gauge and 9 gauge thick, 50,000 to 70,000 pounds tensile strength .... extra, 1.5¢
Best Boiler Steel, 10 gauge to 12 gauge thick, 50,000 to 70,000 pounds tensile strength .... extra, 1.7¢
Best Boiler Steel Plates, 90 inches to 100 inches wide, extra on each thickness, ¼¢
Best Boiler Steel Plates, 100 inches to 105 inches wide .... extra on each thickness, ½¢
Best Boiler Steel Heads, 95 inches diameter to 105 inches diameter .... extra on each thickness, ½
Best Boiler Steel Heads, 105 inches diameter to 108 inches diameter .... extra on each thickness, 1¢
Heads, when not in complete Boiler sets, to be ⅝¢ per pound extra on each above grade, thickness and size. No Steel to be sold as Marine Boiler Steel except Best Boiler grade. Tank Steel, not stamped, ¼¢ per pound less than Shell Steel, subject to same classification.

Miscellaneous Cast Steel.

Auger and Auger Bit....3¢	Roller ....5½¢
Axle Steel for carriages and wagons........3¢	Spindle, subject to Machin'y classification.5½¢
Frog Points & Plates.5½¢	Trap Spring Steel......6¢
Frog Side Bars........5¢	Forged Crank Pins and Lathe Spindles......7½¢
Pick, plain (hammered).5¢	Piston Rods, plain......4¢
Pick and Mattock, beveled (rolled)........3¢	Piston Rods, forged to shapes........7½¢
Skate Steel........4½¢	Slide Bars, plain........5¢
Pike and Cant Hook....7¢	
Coal & Granite Wedge..7¢	Do., forged to shapes...7½

FILE CAST STEEL.

Square. Round, Half Rnd and Flat Bastard, 8 in. and over........	Mill Saw, 8-in. and over.5¢
	Taper, 3½-in. and over..6¢
	Horse and Shoe Rasp....5¢

SPRING CAST STEEL.

Spiral, Taper, cut to lengths .... 5½¢
Solid Safe Cast Steel .... 4¢
Three and Five Ply Cast Steel .... 5¢

AGRICULTURAL IMPLEMENT CAST STEEL.

Fork & Rake, Crucible..4¢	Corn Stalk Cutter, bev..4¢
Horse Rake Steel, cut to lengths, Crucible. ....5¢	beveled Hoe and Shovel Steel in Bars........4½¢
Hoe, Crucible........5¢	Cruc. Plow St'l in Slabs.4¢

Rolls and Castings.

Per lb.
Furnace and Floor Plates .... 1¾¢
Sand Rolls over 12 inches diameter .... 2¼¢
Sand Rolls 12 inches diameter and under .... 2¾¢
Roll Pinions over 12 inches diameter .... 2½¢
Roll Pinions 12 inches diameter and under .... 3 ¢
Housen and Rolling Mill Castings not otherwise specified .... 2¼¢
Spindles and Coupling Boxes .... 2 ¢
Squeezer Castings .... 2¼¢
Squeezer Pinions and Wheels .... 2½¢
Guide Plates .... 2½¢
Spur and Bevel Wheels, large .... 3 ¢
Spur and Bevel Wheels, small .... 3½¢
Pulleys, up to 30 inches .... 4 ¢
Pulleys, over 30 inches .... 3½¢
Engine Castings, light .... 4 ¢
Engine Castings, heavy .... 3½¢

White and Red Lead.

Strictly Pure White Lead in Oil, in Kegs. In lots of 500 ℔ and upward, 7¢ ⅌ ℔: in lots less than 500 ℔, 7¼¢ ⅌ ℔ net; in 25-℔ cans, packed in 100-℔ cases, ¼¢, and 12½-℔ cans, 1¢, over keg price; in 1 to 5 ℔ cans, assorted, in 100-℔ cases, 2½¢ over keg price.
Strictly Pure Dry White Lead in kegs, ⅌ ℔ .... 7 ¢
Strictly Pure Red *extra bright and fine*, in kegs...7 ¢
Strictly Pure Litharge, *powdered, ext. fine*, in kegs..7 ¢
Orange Mineral, *True*, in barrels, net 6 days and not subject either to rebate or freight equalization .... 8½¢
Orange Mineral, *True*, in 100-℔ kegs, net 60 days and not subject either to rebate or freight equalization 9
Terms: Note or acceptance at 60 days; or less 2½ % for cash if paid within 15 days from date of invoice on lots of 500 ℔ and over.
Freight equalized with all points where White Lead is made.

Window Glass.

Discount, 75 % *Single Strength*; 75 & 10 % *Double*. Prices current. ⅌ box of 50 feet.

Single Strength.

United Inches	Sizes	AA.	A.	B.	C.
25	6 x 8 to 10 x 15	$8.75	$8.00	$7.50	$7.00
39	11 x 14 to 15 x 24	9.25	8.50	8.00	7.25
48	16 x 24 to 20 x 28	10.75	9.75	8.75	7.75
54	15 x 34 to 24 x 30	12.25	10.75	9.00	....
60	26 x 28 to 24 x 36	13.00	11.50	9.75	....
70	26 x 36 to 26 x 44	14.50	13.25	10.75	....
80	26 x 46 to 30 x 50	15.00	14.00	11.25	....
84	30 x 52 to 30 x 54	....	....	....	....
90	30 x 56 to 34 x 56	....	....	....	....
94	34 x 58 to 34 x 60	....	....	....	....
100	36 x 60 to 40 x 60	....	....	....	....
	Double Strength.				
25	6 x 8 to 10 x 15	13.25	12.25	11.25	10.5
39	11 x 14 to 15 x 24	14.50	13.25	12.50	11.2
48	16 x 24 to 20 x 28	17.25	15.75	14.00	....
54	15 x 34 to 24 x 30	19.75	17.25	14.50	....
60	26 x 28 to 24 x 36	21.00	18.50	15.75	....
70	26 x 36 to 26 x 44	23.25	21.25	17.25	....
80	26 x 46 to 30 x 50	24.00	22.50	18.00	....
84	30 x 52 to 30 x 54	25.75	23.25	19.25	....
90	30 x 56 to 34 x 56	27.75	25.00	21.75	....
94	35 x 58 to 34 x 60	29.25	27.75	24.00	....
100	36 x 60 to 40 x 60	33.25	30.00	27.75	....

Sizes above — $10 ⅌ box extra for every 5 inches.
An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length, and not making more than 81 united inches, will be charged in the 84 united inches bracket.

Hubbard, & Co.'s Goods.

Axes, Single Bit, Lippincott .... per doz., $7.00
Axes, Single Bit, James & Co .... per doz. 6.50
Axes, Double Bit, Lippincott .... per doz., $12.00
Axes, Double Bit, James & Co .... per doz.. 10.00
Drain Tools, list .... dis 20&7½&5 %
Hoes, Planters' and Scovill Pattern .... dis 60 %
Hoes, Handled, Square Eye, German .... dis 60 %
Handles, Cross Cut .... per doz., $2.25
Handles, Shovel, Bent, Bored, Riveted..per doz., 2.00
Saws, Circular .... dis 50 %
Saws, Long .... dis 45 %
Saws, Cross-Cut, H. B. & Co., Champion, foot net..$0.27
Saws, Cross-Cut, Lippincott, Champion, foot net..$0.25
Shovels, list .... dis 20&7½&5 %
Spades, list .... dis 20&7½&5 %
Scoops, list .... dis 20&7½&5 %

BOSTON.

Reported by Bigelow & Dowse.

Ammunition.
Cartridges—
Rim Fire Cartridges ..... dis 60 %
Rim Fire Military Cartridges ..... dis 15 %
Cen. Fire Cartridges, Pistol and Rifle ..... dis 40 %
Cen. Fire Cartridges, Military and Sporting ..... dis 30 %
Blank Cartridges, except 22 and 32 cal., an additional 10 % over above discounts.
Blank Cartridges, 22 cal $1.50
Blank Cartridges, 32 cal 3.00
Primed Shells and Bullets ..... dis 25 %
B. B. Caps, Round Ball $1.60
B. B. Caps, Conical Ball, Swaged 1.75
Primers—
Berdan Primers, all sizes, and B. L. Caps (for Sturtevant Shells) ..... 90¢
All other Primers, all sizes $1.10
Shells—
Paper Shot Shells, 1st and 2d or S. G. qual. ..... dis 25&5 %
Paper Shot Shells, Club, Rival, Climax ..... dis 40&5 %
Paper Shot Shells, Star Brand ..... dis 50&5 %
Brass Shot Shells, first quality ..... dis 60 %
Brass Shot Shells, Club, Rival and Climax ..... dis 65 %
Wads—
U. M. C. & W. R. A.—R. E., 11 up $2.00
U. M. C. & W. R. A.—R. E., 9&10 ..... 2.30
U. M. C. & W. R. A.—R. E., 7&8 ..... 2.60 } dis 20 %
U. M. C. & W. R. A.—P. E., 11 up 3.10
U. M. C. & W. R. A.—P. E., 9&10 ..... 4.00
U. M. C. & W. R. A.—P. E., 7&8 ..... 4.90

Anvil & Vise.

	10	20	30	40	
Cheney	$3.50	4.50	5.50	6.50	dis 25 %

Eagle, Fisher & Norris, No. 00, $1.75; 0, $2.25; 1, $2.75; 2, $3.25; 3, $4.00; 4, $4.50; 5, $5.25 6, $6.00; 7, $6.50; 8, $7.25; 9, $8.25.
100 ℔ and over 10¢ ℔ ..... dis. 20 %

Augers & Bitts.
L'Hommedieu's Ship Auger ..... dis 15 %
Jenning's Bitts ..... dis 25 %
Cook's Bitts ..... dis 50&10 %
Griswold's Bitts ..... dis 60&10&5 %
Lewis's Patent Bitts ..... dis 40 %
Jennings' Pattern ..... dis 50&10&5 %

Awning Fixtures.
Dearborn's No. 1 ..... ℔ doz $10.50 }
Dearborn's No. 2 ..... ℔ doz 10.50 } dis 25 %
Dearborn's No. 3 ..... ℔ doz 13.50 }

Axes.
Blue Jackets ..... ℔ doz $7.00
Francis Axe Co ..... ℔ doz 7.00
Romer Bros ..... ℔ doz 6.50
Romer Bros., Polished Steel ..... ℔ doz 8.00

Axle Grease.
Belknap's tin boxes ..... ℔ doz $2.00
Belknap's 5 ℔ pails ..... ℔ doz 7.00
Belknap's 10 ℔ pails ..... ℔ doz 12.00
Belknap's 50 ℔ cans ..... ℔ ℔ .10

Ax Handles.
Oak Extra, 31 in., No. A ..... ℔ doz $2.50
Oak Extra, 34 in., No. A ..... ℔ doz 2.50
Oak Extra, 31 in., No. B ..... ℔ doz 2.00
Oak Extra, 34 in., No. B ..... ℔ doz 2.00
Oak Extra, 31 or 34 in., No. C ..... ℔ doz 1.40

Balances.—Chatillon's ..... dis 40&10 %

Barn Door Rail.
Cast Angle (for Anti-Friction Hangers) ..... ℔ ft., 2¢
Cast Half Round ..... ℔ ft., ⅝, 2½¢; ¾, 3¢
Wrought Round ..... ℔ ft., ½, 2½¢; ⅝, 3¢; ¾, 4¢

Bird Cages.
Hendry's Japanned ..... dis 40&10 %
Hendry's Brass ..... dis 33⅓&10 %

Blind Fasts.
No. 6 Fasts ..... ℔ C sets 6.00
Shedd's ..... ℔ C sets 6.00

Blind Hinges.—Mall. Hook, 3 holes ..... ℔ C sets 7.00

Blocks.—Tackle ..... dis 50 %

Bolts.
Carriage.
Com. list June 10, 1884 ..... dis 75&10 %
Genuine Eagle, list October, 1884 ..... dis 75 %
Tire.
Common, list February 28, 1883 ..... dis 65&10 %

Borax.—Refined ..... ℔ ℔ 10¢

Boring Machines.
Eagle Upright, each ..... $5.50 list } dis 50
Eagle Angle, each ..... 6.75 list } & 10 %

Braces.
Barber's ..... dis 50 %
Spofford's ..... dis 50&10 %

Brackets.
Rick Bros. Bronzed Shelf ..... dis 50&10 %
Rick Bros. Store Shelf ..... dis 40&10 %

Bright Wire Goods.
Regular list ..... dis 80 %

Butts.—Union Fast Joint ..... dis 60&10 %
Union Loose Joint ..... dis 70&10 %
Union Japanned Acorn ..... dis 70&10 %
Union Silvered Acorn ..... dis 70&10 %
Union Boston Finish ..... dis 80 %
Union Spiral Spring ..... dis 40 %
Wrought Brass ..... dis 75&10 %

Carriage Bolts.—Eagle Norway ..... dis 75 %
Common, new list ..... dis 75&10 %

Cards.
Watson's make Horse & Curry ..... dis 10 % } Rev. List, Aug., 1883.
Watson's Cotton ..... dis 10 % }
Watson's Wool ..... dis 10 % }

Carpet Sweepers.
Welcome Rubber Roll ..... ℔ doz $10.00
Welcome Cog Wheel ..... ℔ doz 17.00

Casters.—Bed and Table ..... dis 50&10 %

Chain.
Coil 3-16 ..... ℔ ℔ 8¢
Coil ¼ ..... ℔ ℔ 6¢
Coil 5-16 ..... ℔ ℔ 5¢
Coil ⅜ ..... ℔ ℔ 5¢
Coil 7-16 ..... ℔ ℔ 4½¢
Coil ½ ..... ℔ ℔ 4½¢

Chalk.—White, Carpenter's ..... ℔ gross 55¢
Red, Carpenter's ..... ℔ gross 75¢
Blue, Carpenter's ..... ℔ gross 90¢
Crayons ..... 12¢

Chisels.—Peck, Stow & Wilcox ..... dis 70&10&10 %
Underhill, Framing ..... dis 40 %
Buck's Chisels ..... dis 30 %

Coal Hods.—Galv'd, New List ..... dis 60&10&10 %
Japanned, New List ..... dis 60&10&10 %

Cocks, Brass.
Racking } dis 55&10 %
Globe }
Plain Bibbs }
Compression, Eastern Mfg. Co.:

	¼	⅜
To Screw ..... ℔ doz	$2.50	2.50
To Solder ..... ℔ doz	2.50	2.50

Coffee Mills.—New List ..... dis 45&10 %

Copper Rivets ..... dis 50&10 %

Cordage.
Manila, usual trade dis 1¢ ℔ ℔ ..... ℔ ℔ 12½¢
Sisal, usual trade dis 1¢ ℔ ℔ ..... ℔ ℔ 9¢

Cow Ties ..... dis 50&10 %
No. 30 3 ft. No. 6 Wire, with toggle ..... ℔ doz $3.80
No. 35, 3 ft. No. 6 Wire, with snap ..... ℔ doz 4.00
No. 40, 3½ ft. No. 6 Wire, with toggle ..... ℔ doz 4.30
No. 45, 3½ ft. No. 6 Wire, with snap ..... ℔ doz 4.50
No. 50, 4 ft. No. 4 Wire, with toggle ..... ℔ doz 4.75
No. 55, 4 ft. No. 4 Wire, with snap ..... ℔ doz 5.00
No. 60, 4¼ ft. No. 3 Wire, with toggle ..... ℔ doz 5.60
No. 65, 4½ ft. No. 3 Wire, with snap ..... ℔ doz 5.80

Crow Bars.—Cast Steel ..... ℔ ℔ 5¢

Cutlery.
Pocket American Shear Co.'s ..... net
Pocket Eastern Shear Co.'s ..... net
Butcher Knives, Wood's, Lap Bolster, Square Handle ..... dis 40 %
Steak Knives ..... dis 40 %
Lap Bolster, Oval Handle ..... dis 40 %
Sticking ..... dis 40 %
Skinning ..... dis 40 %
Butcher, Common Round Handle, Wood's ..... dis 40 %
Shoe Knives, Wood's ..... dis 30 %

Dog Collars.
Embossed Gilt, Pope & Stevens' list } dis 40 %
Leather, Pope & Stevens' list }
Brass, Pope & Stevens' list }

Door Springs.—Torrey's Rod ..... ℔ doz $1.50
Gem Coil, new list ..... dis 20 %
Crown ..... ℔ doz $1.00
Warner's ..... ℔ doz 1.50

Drawing Knives.
Kimball's Solid Steel ..... ℔ inch 7½¢
Eastern Mfg. Co.'s Solid Steel ..... ℔ inch 7½¢ dis 20 %

Drills.—Morse Twist Drill Co.'s.
Bit stock Drills } dis 50 %
Wire Gauge Drills }
Jobbers' and Letter Drills }

Drill Chucks.
Morse's Beach Patent ..... each $8, dis 20 %
Morse's Adjustable ..... each $7, dis 20 %

Emery.

	No. 4 to 46 gr.	No. 54 to 150 gr.	Flour, FF, F, FF.
Kegs, ℔ ℔	4 ¢	4 ¢	2½¢
½ kegs, ℔ ℔	4½¢	4½¢	2½¢
¼ kegs, ℔ ℔	4½¢	5 ¢	3½¢
10 ℔ cans, ℔ ℔	7 ¢	7 ¢	5 ¢

Enameled Ware.
Enameled Kettles ..... dis 50 %
Enameled Sauce Pans ..... dis 25 %

Files.
American File Co ..... dis 60 %
Nicholson File Co ..... dis 60 %

Fly Traps.
Paragon ..... ℔ doz $2.00
Balloon ..... ℔ doz 1.75

Forks.
Withington & Cooley Mfg. Co.'s ..... dis 60&10 %

Freezers.
Packer's ..... dis 60 %
Gouche's ..... dis 60 %

Grub Hoes.
Iron City Tool Co.'s ..... dis 60 %

Hammers.
Maydole's ..... dis 25 %
C. Hammond's ..... dis 40 %

Hangers.
Common Hangers ..... dis 50&10 %
Common Rollers ..... dis 50&10 %
Faultless Hangers ..... dis 40 %
Victor Hangers ..... dis 50 %
American Parlor Door, $6 set ..... dis 20&10 %

Hatchets.—C. F. Dowse, new list ..... dis 40 %
Underhill ..... dis 40 %
Eastern Tool Co.'s ..... net

Hay Knives.—Lightning ..... $18.00, dis 10 %

Hinges.—Strap and T (new list) ..... dis 65 %
Providence Plate ..... ℔ ℔ 5 ¢
Wrought Screw Hook ..... ℔ ℔ 5 ¢

Hoes.—W. & C. Mfg. Co.'s ..... dis 60&10 %

Hooks and Staples.—Brewer's (new list) ..... dis 70 %

Horse Nails.

	No. 6	7	8	9	
Putnam Pointed	$0.24	.22	.21	.20	.5&7 %
Bridgewater	.23	.21	.20	19	.30 %

Knobs ..... dis 45 %

Lanterns.—Tubulars, No. 0 ..... ℔ doz $7 50

Lawn Mowers.
Continental ..... dis 5 &5 %
Quaker City ..... dis 5 &5 %
Philadelphia Keystone ..... dis 50&5 %

Lead.—Sheet ..... ℔ ℔ 8¢
Pipe ..... ℔ ℔ 7¢

Locks.—Norwalk ..... dis 45 %
Eagle Cabinet ..... dis 40 %
Eagle Trunk ..... dis 15 %
Mallory, Wheeler & Co. ..... dis 6⅔&5 %

Manure Forks.—W. C. & Co ..... dis 60&10 %

Mattocks.
Long Cutter, $16.00 ℔ doz } dis 60 %
Short Cutter, $15.50 ℔ doz } dis 60 %
Pick Cutter, $16.00 ℔ doz }

Measuring Tapes.—Eddy's ..... dis 20 %

Meat Cutters.
Enterprise ..... dis 30

Nos.	10	12	22	32	42
Each	$3.00	2.50	4.00	6.00	10.00

Nails ..... ℔ keg $2.35
Wire Nails, list April 13, 1886 ..... dis 50&5 @ 50&10 %
Wire Carpet Nails ..... dis 60 %

Oilers.—Zinc and Tin ..... dis 60 %
Brass and Copper ..... dis 50 %
Draper's Common, ℔ doz., $3.75; Patent, ℔ doz $4.50
Thompson's ..... ℔ doz $3.00
Malleable Iron ..... dis 10 %

Ox Bows.—Extra finished and varnished ..... dis 15 %
1¼ in., ℔ doz. pair ..... $7 00 | 2 in., ℔ doz. pair $10.00
1¾ in., ℔ doz. pair ..... 9 00 | 2¼ in., ℔ doz. pair 12.00

Paper.—Common Tarred Sheathing ..... ℔ ℔ 1½¢
Eagle Brand Tarred Sheathing ..... ℔ ℔ 2 ¢
Common, Dry Sheathing ..... ℔ ℔ 1½¢
Eagle Brand Dry Sheathing ..... ℔ ℔ 2½¢
Neponset Water Proof ..... ℔ ℔ 3½¢

Picks.
I. C. T. W., Adze Eye, 6 to 7 ℔ $13.00 ..... dis 60 %

Planes.
Auburn Tool Co., Bench ..... dis 20 %
Auburn Tool Co., Fancy ..... dis 15 %
Auburn Tool Co., English Iron ..... dis 15 %
N. Y. Tool Co., Bench ..... dis 25 %

Plated Ware.—Rogers & Bro ..... dis 50&10 %

Pliers.—Vom Cleff & Co.'s ..... net list
Button's Wire Pliers ..... dis 33⅓ %

Plumb & Levels.—Stanley R. & L. Co ..... dis 70&10 %

Potato Diggers.
W. C. & Co., reduced list ..... dis 60&10 %

Pulleys.—Acme or Excelsior, 1¾ in ..... ℔ doz 22¢
Acme or Excelsior, 2 in ..... ℔ doz 24¢

Pumps.—Union Manufacturing Co.
Iron Cistern ..... dis 50 %
Iron Pitcher Spout ..... dis 60 %
Copper ..... dis 30 %

Rivets.—In 5 ℔ papers ..... dis 45 %
Burrs ..... dis 50 %
Copper ..... dis 60 %

Razors.
Genuine Swedish ..... ℔ doz $13.50

Rope.—Manufacturers' list, February 6, 1886

Manila	⅛ inch and larger	℔ ℔ 12½¢
Manila	⅜ inch	℔ ℔ 13 ¢
Manila	¼ and 5-16 inch	℔ ℔ 13½¢
Manila, Tarred Rope		℔ ℔ 12 ¢
Manila, Hay Rope		℔ ℔ 12½¢
Sisal	⅛ inch and larger	℔ ℔ 9 ¢
Sisal	⅜ inch	℔ ℔ 9½¢
Sisal	¼ and 5-16 inch	℔ ℔ 10 ¢
Sisal, Hay Rope		℔ ℔ 9 ¢
Sisal, Tarred Rope		℔ ℔ 8½¢
Sisal, Single Ply Lath Yarn		℔ ℔ 8 ¢

Cotton Rope ..... ℔ ℔ 15@18¢ net
Jute Rope ..... ℔ ℔ 7¢

Rules.—Stanley, Boxwood ..... dis 75&10 %
Stanley, Ivory ..... dis 60&10 %

Sad Irons.—Common ..... ℔ ℔ 3 ¢
Laundry ..... ℔ ℔ 6¼ ¢
Tailors' Geese ..... ℔ ℔ 6 ¢
Enterprise "Potts" ..... dis 40 %

Sandpaper.—Baeder & Adamson ..... dis 20 %

Sash Weights.—Patent Eye ..... ℔ ℔ 1½¢

Saws.—Hand Saws, Disston's ..... dis 20 %
Cross-Cut Saws.
Disston's, Common Tooth ..... ℔ foot 68¢, dis 45 %
Disston's Great American Tooth ..... ℔ foot 68¢, dis 45 %
M. R. & D., Hand Saws ..... dis 33⅓ %
Richardson Bros ..... dis 25 %

Saw Blades.—Disston ..... dis 20 %
Welch & Griffith, Extra ..... ℔ doz $7.20
Welch & Griffith, No. 2 ..... ℔ doz 6.00

Scales.—Fairbanks ..... dis 20 %

Screen Window and Door Frames.
Hart's Screen Frames, No. 1 ..... ℔ doz $1.75
Hart's Screen Frames, No. 2 ..... ℔ doz 2.25
Hart's Screen Doors, No. 10 ..... ℔ doz 7.50

Screws.
Wood Screws—List February 15, 1886.
Flat-Head Iron ..... dis 75&10 %
Round-Head Iron ..... dis 70&10 %
Flat-Head Brass ..... dis 75 %
Round-Head Brass ..... dis 70 %
Flat-Head Bronze ..... dis 75 %
Round-Head Bronze ..... dis 70 %
Machine—
Flat-Head, Iron ..... dis 60 %
Round-Head Iron ..... dis 55 %

Scythes.
Blood's Clipper Scythes ..... ℔ doz $6.50
Nolin's Clipper Scythes ..... ℔ doz 7.00
Nolin's Solid Steel Scythes ..... ℔ doz 9.00
Emerson Clipper Scythes 7.00
Emerson Solid Steel Scythes 9.00

Shears.—American Shear Co., new list ..... dis 70 %

Shot.—Le Roy ..... ℔ ℔ 6¢

Shovels.—O. Ames, new list ..... dis 20 %
O. Ames, other brands, new list ..... dis 20 %

Sinks.—Magee Patent ..... dis 30 %

Snow Shovels $3.75

Skates.—Eastern Acme.
No. 5, Steel Runners ..... ℔ pair $1.00
No. 7, Steel Runners, hardened ..... ℔ pair 1.50
No. 10, Steel Runners, hardened, Nickel Plated ..... ℔ pair 2.00

Stocks and Dies.—King's ..... dis 10&5 %

Tacks.—Eastern Mfg. Co.
American Iron Carpet Tacks, all kinds ..... dis 65&10 %
Steel Carpet Tacks, all kinds
Swedes Iron Carpet Tacks, all kinds
Swedes Iron Tacks
Swedes Iron Upholsterers' Tacks } dis 60&10 %
Tinned Swedes Iron Tacks
Tinned Swedes Iron Upholsterers' Tacks
American Iron Cut Tacks ..... dis 55&10 %
Copper Tacks
Copper Finishing and Trunk Nails
Cigar Box Nails
Finishing Nails
Hungarian Nails and Miners' Tacks
Gimp and Lace Tacks } dis 50&10 %
Tinned Gimp and Lace Tacks
Trunk and Clout Nails
Tinned Trunk and Clout Nails
Basket Nails
Chair Nails
Common and Patent Brads ..... dis 45&10 %

Transom Lifters.
Wollensak's Patent Iron Bronzed ..... dis 50 %

Traps.—Game.
Newhouse ..... dis 35 %
Oneida Pattern ..... dis 60&10&10&10 %
Game, Blake's Patent ..... dis 40&10&5 %

Vises.—Simpson's Adjustable ..... dis 33⅓ %
Howard Vise Co ..... dis 33⅓ %
I. C. T. Co.'s Blacksmiths' ..... dis 50&10 %

Weather Strips.
Richmond Bottom Strip, Walnut ..... ℔ doz $5.00
Richmond Bottom Strip, Imit. Walnut ..... ℔ doz .....
Richmond Bottom for Double Doors ..... ℔ doz 15.00
Packer's ..... ℔ doz 4.50
Underwood's ..... ℔ pair, plain $3.75, rubber 4.00

Wire Cloth.—"Clinton" ..... ℔ sq. ft. 2 ¢

Wire Fence.
Buffalo Painted Barbed ..... ℔ ℔ 4 ¢
Buffalo Galvanized Barbed ..... ℔ ℔ 4½¢

Wrenches.—A. G. Coe's ..... dis 60 %
Girard Mfg. Co ..... dis 60&10 %
Girard Agt ..... dis 70&10 %
"Always Ready" ..... dis 25 %

Wringers.
Novelty for Common Tubs No. 2—10-in ..... ℔ doz $27.00
" " No. 3—11-in ..... ℔ doz 31.50
Excelsior for Stationary Tubs No. E—10-inch ..... ℔ doz 39.00
Excelsior for Stationary Tubs No. F—11-inch ..... ℔ doz 43.50
Excelsior with Folding Bench No. A—10-inch ..... ℔ doz 48.00
Excelsior with Folding Bench No. B—11-inch ..... ℔ doz 52.50
Novelty Set Tub, E ..... ℔ doz .....
Universal ..... ℔ doz 27.00
Eureka ..... ℔ doz 30.00

Zinc ..... ℔ ℔ 5½¢

McNab & Harlin Mfg. Co.,

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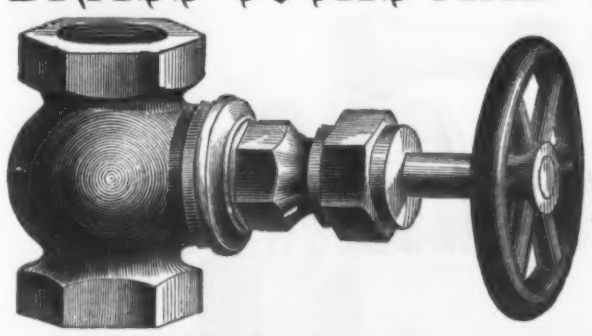

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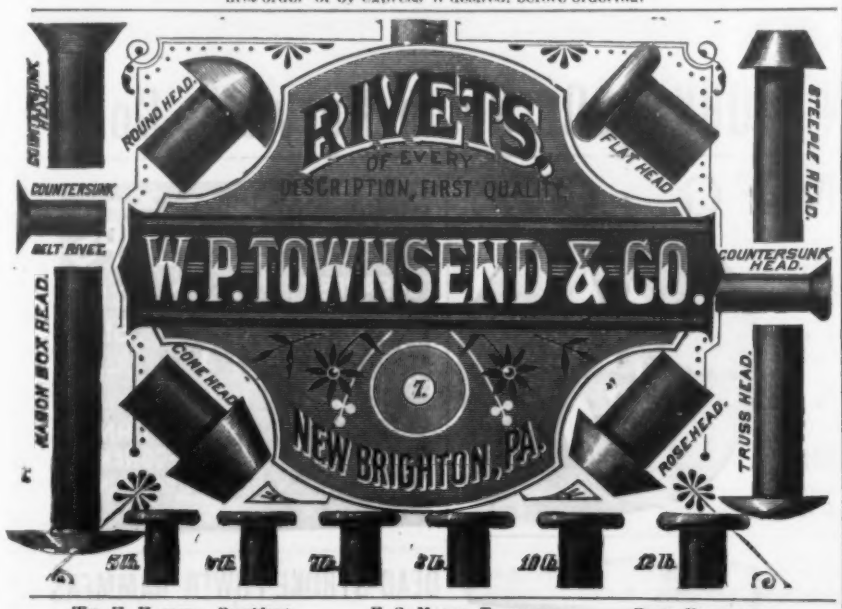

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Bolts, Cold-Punched Nuts & Washers

SUITABLE FOR MACHINERY OF ALL KINDS.

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The American Nail Machine Co.,

MANUFACTURERS OF

AMERICAN PATENT

IMPROVED CUT NAIL MACHINES,

AUTOMATIC NAIL SELECTORS and NAIL FACTORY SUPPLIES.

ASHTABULA, - - - OHIO.

Prices and particulars furnished on application.

TENSILE STRAIN. } 56,000 to 64,000 lbs.

REDUCTION OF AREA—35 to 43 per cent

CAPACITY. { Plates 1¼ inch thick to No. 14. 30 feet long. 70 inches wide.

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MANUFACTURERS OF

BOILER PLATE

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CHARCOAL BLOOMS.

Locomotive, Fire Box, Flange and Shell Iron; Plate for Bridges and Girders; Tank and Stack Iron; Boat Plate and Iron for Wrought Pipe; Plate Iron for Fire and Burglar Proof Safes.

—THE—

Packer Ratchet.

These tools have been made by us for a number of years, and are well known as the leading Ratchet Drill in the market. They are manufactured of the *best material* and in a *thorough* manner. The screw is protected with a round sleeve, keeping dirt and grit from cutting the thread.

These Ratchets are made with Steel Screws, Pawls and Hardened Points. Handles and Nuts are of Norway Iron, Pawls and Ratchets of Steel, Forged, Solid and Milled Out.

EVERY TOOL IS WARRANTED.

THE ASHCROFT MANFG. CO.,

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22 in. x 22 in. x 5 ft.

PLANER.

Price, $425.

THE HENDEY MACHINE CO.,

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MANUFACTURERS OF

Presses, Dies,

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Special Machinery

FOR

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North Wayne Tool Co.,

HALLOWELL, MAINE.

W. H. CARTER'S PATENT NEEDLE HAY KNIFE.
PAT. APR. 29, 1884.
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Improvement Patented April 28, 1885.

SOLE MANUFRS. OF Carter's Improved **NEEDLE HAY KNIFE,** THE BEST IN THE WORLD.

Patented April 29, 1884.

Improvement patented April 28, 1885, of which we are the sole manufacturers, has been tested with the most celebrated knives of other makers, and has proved an easier and faster Cutter than any other. Its special excellence consists in the chisel-edge tooth shown in the engraving. It may be used for cutting hay in the mow, stack and bale; also for ditching, cutting peat, or any other work for which a hay knife is used. It can be readily ground by the most inexperienced, as it requires to be ground only on one side. Should a tooth break, all that is necessary to replace the damage is to grind it once and a new chisel-tooth appears. It can ordinarily be sharpened with a common scythe stone. Try one and you will give it the preference.

Malmedie & Hiby,

DUSSELDORF-OBERBILK (Germany),

MANUFACTURERS OF

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Sole Agent for the United States and Canada.

☞ THE BEST IS THE CHEAPEST. ☜

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Where Electric Apparatus for all the various modes of lighting and transmitting of Power are in operation. **No other** system is as **economical** in Installation and Maintenance. **No other** Electric Light is as **durable**—the first machines made are still in daily operation.

The System Comprises { Arc Lights of various sizes. Arc and Incandescent Lights from one Dynamo and Circuit. Incandescent Lights of various sizes from special Dynamo for Central Station Lighting.

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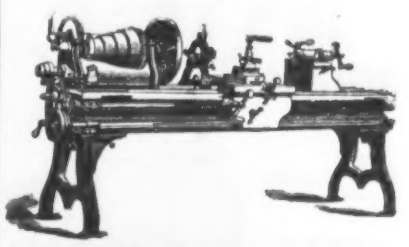

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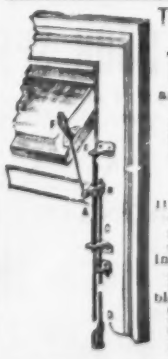

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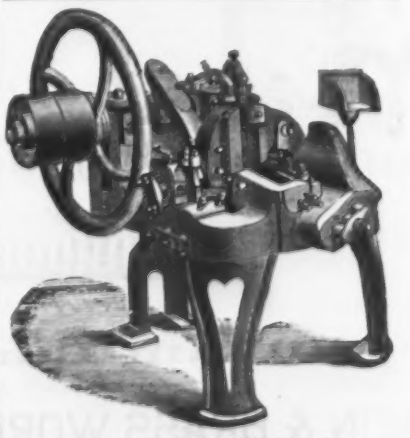

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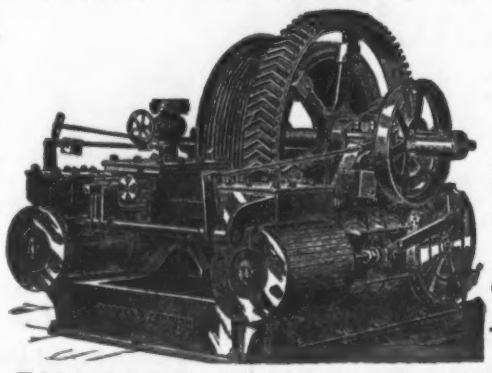

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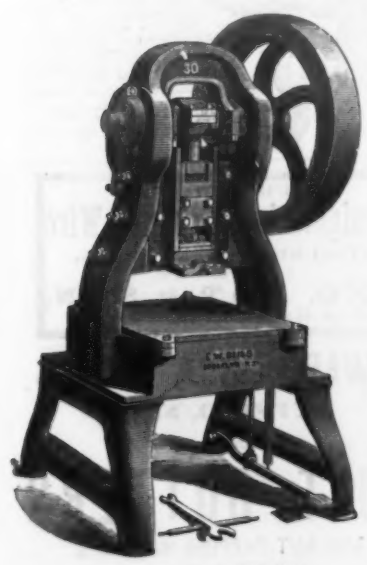

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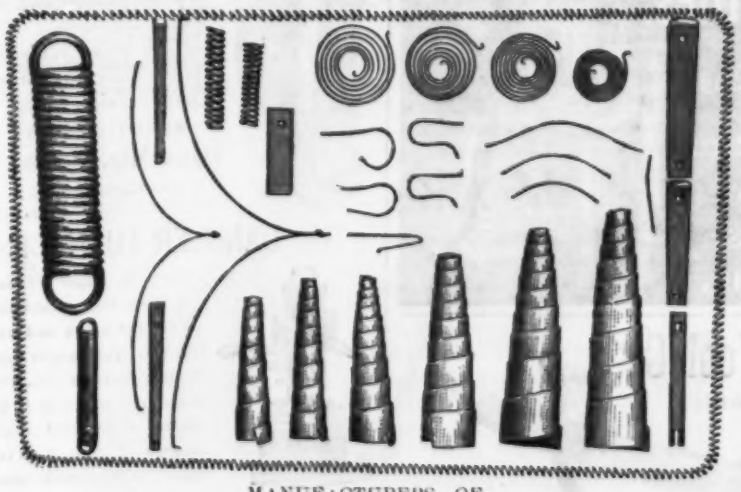

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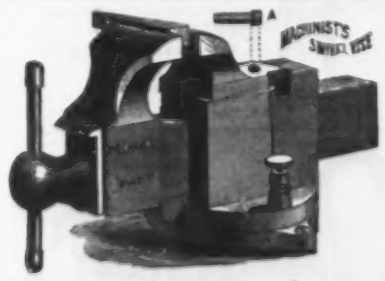

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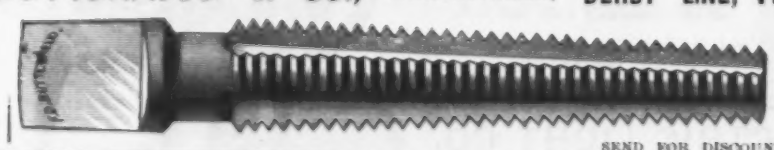

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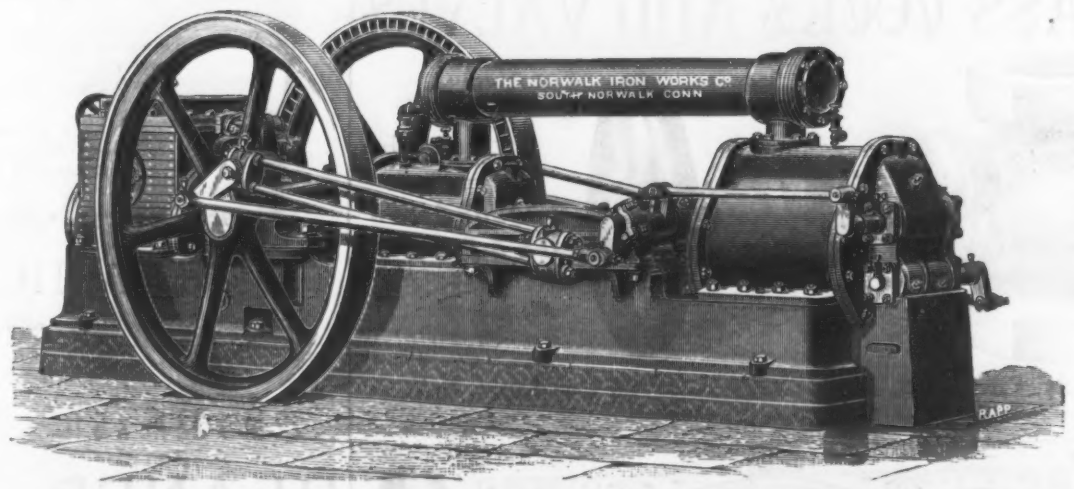

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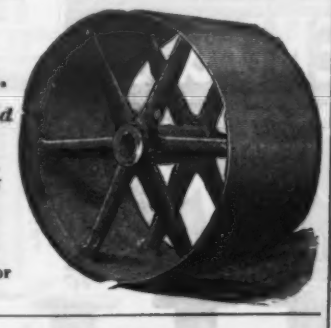

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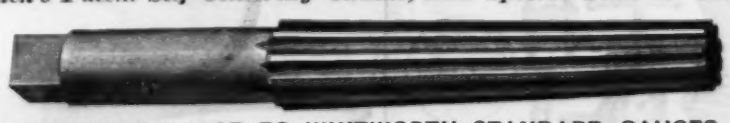

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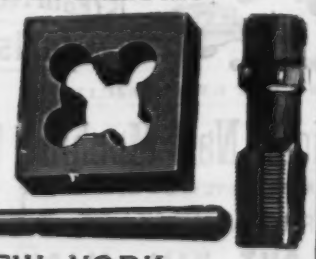

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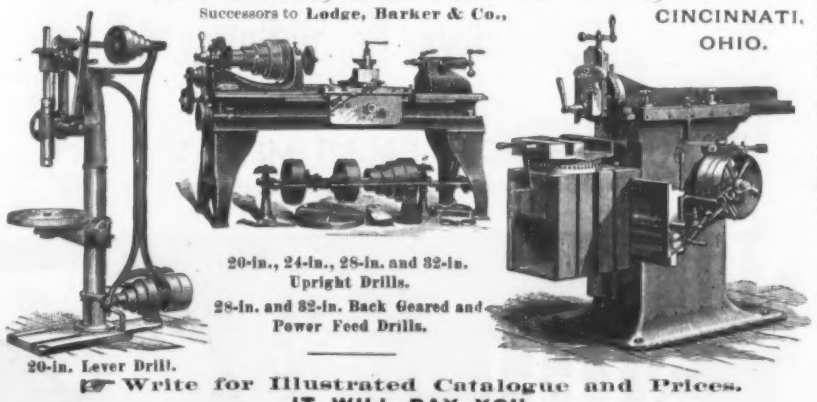

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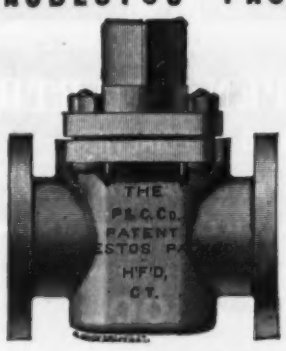

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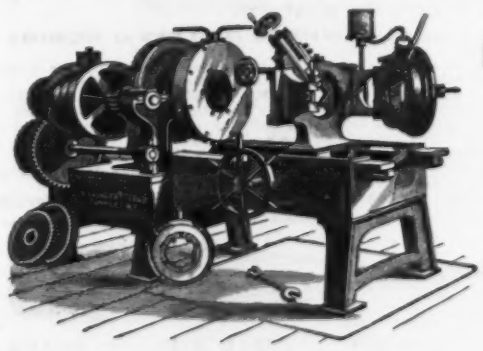

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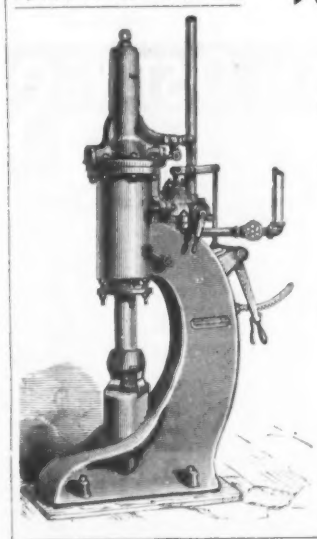

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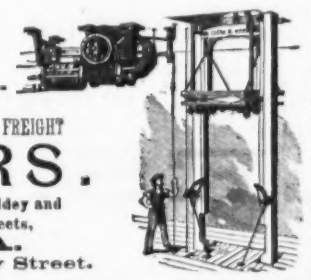

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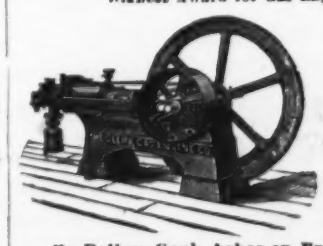

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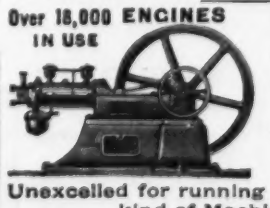

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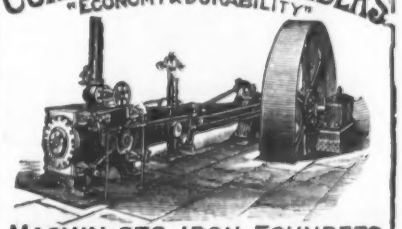

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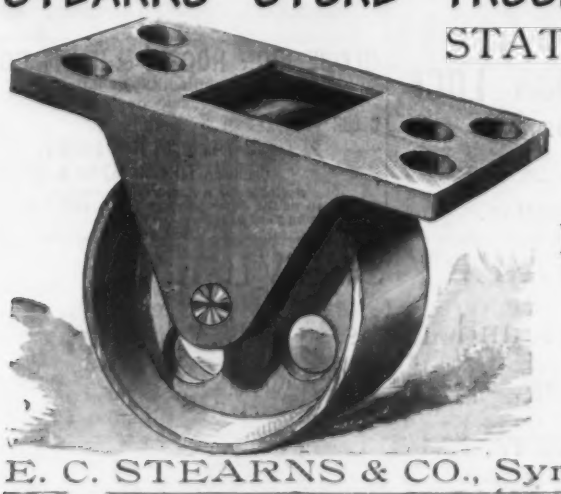

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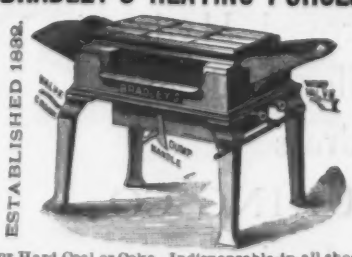

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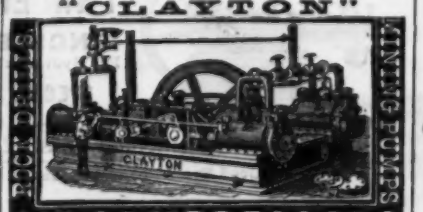

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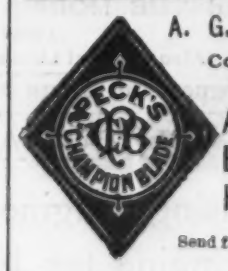

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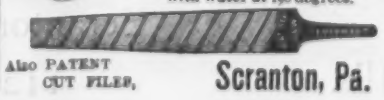

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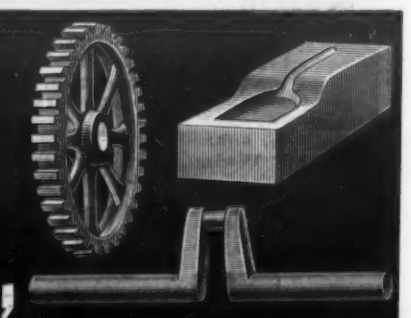

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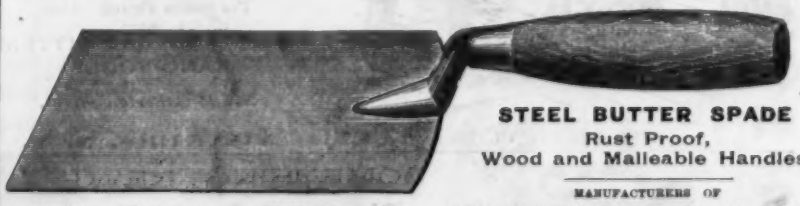

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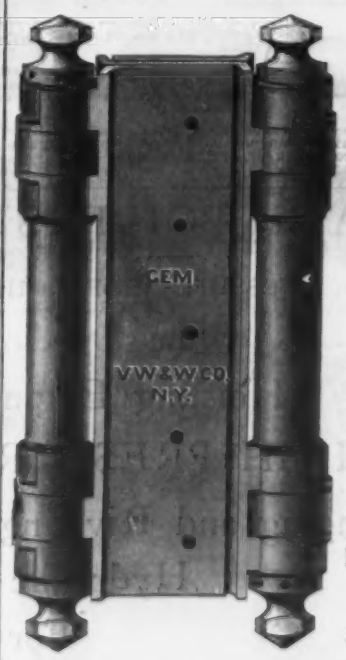

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